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Informal Housing in Egypt  
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#### ABSTRACT

This is a study of informal housing in Egypt sponsored by the U.S. Agency for International Development. Informal housing is illegal housing, generally built in contravention of either zoning laws or building codes and hence unregistered. Objectives of the study were to document the role of the informal sector in quantitative and qualitative terms; to examine characteristics of the individuals who supply and occupy it, and the processes governing its supply and demand; to evaluate its major characteristics in terms of housing and neighborhood attributes and access to utilities and infrastructure; and to examine the policy implications of the findings concerning informal housing. The study focuses on Cairo and Beni Suef. Data collected for the survey included an update of the 1976 census in selected areas of Cairo and Beni Suef (a "scanning survey" of some 17,500 dwellings in the two cities combined), detailed occupant surveys (500 in Cairo and 250 in Beni Suef), and over 200 in-depth interviews with supply-side participants in the housing market.

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Ms. Judith Katz directed the field operations for data collection efforts, supervising recruitment of interviewers, training, field procedures and logistics, and data management. Her contribution to the study for these and other activities is impressive and deserves special recognition.

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## SUMMARY

Housing is acknowledged as a pressing issue in Egypt, having been noted in a major policy address by President Hosny Mubarak during November 1981 as one of seven key areas of domestic policy concern to be addressed by his administration.<sup>1</sup> It is widely perceived, and the President reported, that a significant housing shortage exists and that the need to accommodate population growth, replace poor quality housing, and mitigate the perceived current shortfall will tax the capacity of the housing industry for the next decade or more. Policy actions are currently underway or being contemplated which would stimulate housing production and reduce some elements of housing cost. Simultaneously, external lending agencies have underway and are planning projects to address housing sector problems.

If efforts of these groups are to succeed, they must be rooted in an understanding of the current housing situation in Egypt and of the major factors responsible for influencing housing outcomes. At the center of Egypt's housing situation, though occupying a nebulous and poorly documented role, is the informal housing sector--the subject of this study.

Informal housing in Egypt is illegal housing, built in contravention of either zoning laws (generally laws forbidding residential construction on agricultural land) or building codes. Because informal housing exists outside the law, it also exists outside the formal process of land and building registration and, hence, outside of official statistics on housing production. Thus when information is presented on either current levels of housing production or the future capacity of the housing industry, informal housing is officially ignored. Yet at the same time, it is widely believed, though undocumented, that the informal housing sector provides a significant if not the dominant share of housing currently being produced. But if its quantitative contribution to housing production is largely unknown, its qualitative aspects are even more obscure. Little, for example, is known concerning the structural soundness of informal housing, its access to basic infrastructure, or its costs. Naturally, therefore, little is known about how informal housing compares to formal private housing or to publicly supported housing.

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<sup>1</sup>See Al-Ahram Economist, November 23, 1981.

This is not just a study of informal housing, however. For to evaluate the advantages or disadvantages of policies designed to deal with the informal sector, one must know the features of other housing as well-- those of the private "formal" or legal sector, and of the public sector. Consequently, whenever possible, the study has examined similarities and differences between informal housing and its public and private alternatives.

The geographical focus of the study is on Cairo, the largest Egyptian city, and Beni Suef, a governorate capital to the south of Cairo. The housing and land use problems in those two cities are typical of those in other Egyptian cities, with rapidly rising housing costs, perceived housing shortages, shortfalls in infrastructure, and conversion of agricultural land to urban uses. Thus the observations made in the study are of more general applicability than simply in the two cities under study.

The data utilized in the study are the products of a substantial field data collection effort, covering a wide range of sources. The 1976 census was, for example, updated through a "scanning survey" of some 13,000 dwellings in selected areas of Cairo and 4,500 dwellings in selected areas of Beni Suef. This provided information on recent changes in housing and infrastructure, and provided a sampling frame for 750 detailed household interviews (an "occupant survey") designed to provide information on the occupants (their attitudes, preferences, and demographic characteristics) and on their housing and neighborhoods (physical characteristics, access to utilities and infrastructure, and housing cost elements). In the case of both the scanning and occupant surveys, sampling techniques were designed to permit generalization to the city as a whole. Finally, data were collected in a series of over 200 in-depth interviews from persons involved in or knowledgeable about processes of housing and infrastructure supply. Topics covered included inputs to the housing production process such as land, labor, materials, and finance; the subdivision process; the role of the informal sector; and policy issues.

Among the major findings of the study are the following:

1. The bulk of housing currently being supplied in Egypt is informal housing.

Of units built between 1970 and 1981, 84 percent in Cairo and 91 percent in Beni Suef were estimated to have been informal. These estimates accord remarkably well with those of a recent World Bank/GOHBPR study of the construction industry in Egypt which indicates (when adjusted)

that of units built between 1966 and 1976, perhaps 81 percent of urban and 89 percent of rural units were informal. It is significant that altogether different techniques were used in estimating informal building activity in this study and in the World Bank/GOHBPR study, lending credence to the results of each.

2. The quantitative contribution of the informal sector has been essential in maintaining parity between increases in population and increases in the housing stock.

In Beni Suef, the housing stock has recently grown (1976-81) at about the rate of population; in Cairo, housing has grown even more rapidly than population. In each city these trends represent the continuation of housing and population trends observed between the 1966 and 1976 censuses. In each case, had it not been for the contribution of the informal sector, substantial housing shortfalls would have occurred. Instead, the housing stock has expanded not only at a rate high enough to accommodate new household formation and in-migration in each city, but also to accommodate some moves by established households simply changing their place of residence. In Cairo, the stock has recently expanded to such a degree that a vacancy rate of 5.5 percent of the occupied housing stock has been created, the majority of which is concentrated in predominately informal areas. Much of this expansion has come from vertical expansion of existing buildings, a particular feature of the informal sector. Indeed as much as half to two-thirds of all housing units added to the Cairo housing stock between 1976 and 1981 was estimated to have come about through vertical expansion.

3. Informal housing is similar in many ways to formal housing.

Building designs, building materials, and interior amenities such as kitchens, toilets, and number of rooms are similar for many informal and formal households. In Cairo this results in roughly comparable levels of expressed satisfaction with their dwelling units by formal and informal occupants.

4. Recently built informal housing is of better structural quality than average existing housing in both Cairo and Beni Suef.

Much older housing in both cities is of poor structural quality. New informal housing, while not of comparable quality to new formal housing, is nevertheless of far better average quality than older existing housing. Consequently, recently built informal housing has, on average, added to the overall quality of the housing stock in each city.

5. Informal housing is significantly less well supplied with infrastructure than formal housing.

Most informal households first obtain their land or building with no utility connections; most formal households obtain property with utility connections. Over time these differences often become smaller, at least in Cairo, but do not disappear. This process, however, is neither inexorable nor universal. In Beni Suef, for example, the level of infrastructure provision is much lower than in Cairo, with informal households even more poorly served. Differences in access to infrastructure between formal and informal households persist over time. Also, in some case study areas in Cairo, levels of infrastructure provision were found to be surprisingly low given city-wide levels of access. This suggests that political considerations affect decisions to extend infrastructure to informal areas, and that classifying an area as informal and thus not deserving of infrastructure lines may simply be a convenient rationale for rationing scarce infrastructure resources.

6. Attempts to control the informal sector have largely not succeeded.

Denial of infrastructure to informal areas, fines, harassment by authorities, and occasional demolition of informal buildings have not kept the informal sector from expanding greatly. Few, if any, households express any anxiety about the consequences of having failed to register land or buildings, or having failed to obtain a building permit. Informal areas continue to expand into agricultural land at a high rate (although to the degree that vertical expansion occurs this rate is lower than it might otherwise be).

7. The informal sector appears to be affected by general market conditions in much the same way as does the formal sector.

Building costs have increased in much the same way for informal and formal sector households. For example, when informal sector contractors were asked to recall recent changes in building costs, estimated rates of change were nearly identical to those of similar changes in "official" building costs indices. Even more importantly, land costs have increased as much in informal areas as in formal areas (once having controlled for characteristics of land such as access and neighborhood features, estimated land prices are no different for formal and informal areas).

8. Housing cost increases that have occurred recently have placed an extreme burden on households wishing to become owners or renters for the first time or to change their place of residence; low income, large families have been most seriously affected by these changes.

Because of rent control, households that have not moved recently have had stable rents. On the other hand, households that have moved into a unit within the past several years are spending twice the fraction of their income on housing as average households that have not moved recently. For households in the lowest income quartile, this has meant a doubling from about 15 percent of income to about 30 percent of income. With food consumption requiring between 60 and 70 percent of income among the poor, this places low-income households in an extremely precarious financial position. Similarly, the food requirements of large families sometimes leave them with less disposable income for housing and other goods than is the case for smaller households; cost increases jeopardize their finances in a way similar to the case of low-income households.

9. The most significant factor responsible for housing cost increases in recent years has been increases in land costs, although costs of construction materials and labor have also increased rapidly.

Land price increases at compound annual rates of from 25 to 40 percent have not been uncommon in Cairo during the past decade. A major factor in these cost increases appears to have been the rapid increase in remittances from workers abroad which are channeled into land and housing construction at a high rate. Costs of building materials and labor have increased less rapidly (at annual rates of from 15 to 20 percent) but have nevertheless outpaced general inflation. These trends have resulted in a situation in which typical land costs exceed costs of constructing a single modest dwelling unit in most areas of Cairo. Costs of construction per se are made up of from 10 to 30 percent in construction wages and the remainder materials and profit. Thus, reductions in land costs have the potential for achieving the greatest overall reductions in housing costs, followed by reductions in materials and labor costs respectively.

These findings provide a useful background against which to consider possible changes in policies, programs, and procedures to improve the lot of low-to-moderate income households and to support the general policy objectives of the Egyptian government.

Recommendations have been made in the study concerning (1) the planning process; (2) legal and administrative procedures; (3) housing finance; and (4) the building process. These are summarized below:

#### I. THE PLANNING PROCESS

- A. Expand technical assistance in areas such as structure design and materials usage to residents of informal areas undergoing rapid building and modification. This could be done as a component of programs such as the USAID-sponsored Helwan Home Improvement Program or the forthcoming Neighborhood Urban Services Program.

A major objective of such a program would be to attempt to avoid potential problems of structural failure of higher density buildings now being created while at the same time making efficient use of building resources.

- B. Provide utilities and other infrastructure to informal housing areas already in existence while at the same time pursuing land development and servicing in vacant peripheral areas.

Present patterns of distribution of urban infrastructure are highly inequitable, with informal areas of long standing less well serviced than formal areas, and rapidly developing informal areas poorly serviced. Extension of utilities and other infrastructure to informal areas would be not only fair but also, in many cases, economically efficient. The combination of density in informal areas, proximity to main line infrastructure, and expressed willingness to pay for services by informal area residents implies that infrastructure provision and upgrading could be cost-effective with reasonably good cost recovery prospects.

Land development and servicing of fringe areas is also desirable, however, as a complement to upgrading of existing areas. Such development can help to shape patterns of urban growth, produce relatively efficient land-use patterns, and exert downward pressure on urban land values.

Choices between upgrading and land development and servicing in new areas represent a delicate balance between questions of equity and efficiency, and current and future benefits and costs. Careful consideration should be given to these issues in any central planning activities.

- C. Modify current infrastructure pricing and financing policies to achieve greater cost recovery and to permit possible surpluses so generated to be used for further utility and service extensions and upgrading of existing systems.



## II. LEGAL AND ADMINISTRATIVE PROCEDURES

- A. Undertake a policy of far more selective and vigorous enforcement of building code provisions.

Increasing enforcement against informal housing per se appears to be unwarranted in light of the implicit housing standards represented by such housing and the fact that it appears to adequately serve the needs of most of its occupants. Enforcement activities should instead be directed more toward avoiding catastrophic health and safety failures than is now the case. Enforcement should be targeted to areas and situations likely to present the greatest potential health and safety problems such as new high-rise buildings, "excessive" vertical additions to older buildings, and buildings in poorly drained or highly polluted areas.

- B. Consider returning subdivision control in agricultural areas (particularly within city cordons) to the local level.

Often it appears that residential or other development on marginal (often uncultivable) agricultural land is economically rational, a potential source of local revenue, and involves a decision best made at the local level. Present, highly centralized subdivision control is overly complex, expensive and, in consequence, ignored.

## III. HOUSING FINANCE

Actions should be taken on both the supply and demand sides of the housing market to put downward pressure on housing and land prices, particularly for low and moderate income families.

- A. Among demand-side policies that should be considered are those which make direct cash payments to target group households, providing housing "in-kind" with subsidized rents (though at a different standard than current public housing), providing serviced land at a subsidized price (perhaps with a cross-subsidy from higher income groups or commercial land users), providing subsidies under the rubric of a savings mobilization plan with subsidized interest rates and either bonus payments or the granting of housing mortgages or materials loans for the successful completion of a contract savings plan, or simply granting subsidized mortgages for land and/or buildings. Emphasis in all of these demand-side policies would be on more effectively targeting implicit or explicit housing subsidies to the most needy groups or in specific geographical areas than is now the case.

- B. Supply side policies should aim at reducing prices of housing inputs and at expanding their supply. Domestic capacity for producing building materials should (as is, in fact, planned) be expanded. Technical training of construction workers should be increased. The supply of serviced land should be increased by large-scale public or private land development.
- C. Other measures should be considered to directly or indirectly control the price of land such as large-scale government land banking or expropriation of urban and fringe land and the use of tax and fiscal mechanisms for controlling land speculation and price levels. The experience of other countries with such policies should be explicitly examined for their relevance in Egypt.
- D. Implementation and adequate funding of Article 15 of the 1981 Housing Law should be strongly encouraged. This provision of the law, which deals with housing cooperative funding of adding stories to existing buildings, completing unfinished buildings, or building "economy" housing would both provide an efficient solution to housing production problems and help to target needy groups.

#### IV. THE BUILDING PROCESS

- A. Given the modest share of construction costs which go to construction wages, continued reliance on labor-intensive construction methods is warranted; in consequence, proposals for using capital-intensive pre-manufactured housing systems should be treated skeptically.
- B. Materials subsidy and regulation policies should be reevaluated. Alternatives that should be considered include completely de-regulating government controlled materials or targeting materials subsidies to owners or builders willing to build in designated locations, according to standard designs, or willing to rent to stipulated target group households.
- C. Public housing construction should be either de-emphasized or drastically modified in terms of its standards. There is little evidence that it is needed to fill quantitative housing goals and its high standards imply high subsidies, the likelihood of serving only a miniscule fraction of those eligible for such housing, and the virtual impossibility of cost recovery for most tenants.
- D. Policies should be undertaken to specifically encourage the quantitative and qualitative expansion of the informal sector; e.g., planning and financing for provision and upgrading of infrastructure in informal areas and for the expansion or completion of informal housing buildings, and planning for the provision of infrastructure to new areas for sites and services type projects.

E. Policies should be undertaken to gradually modify the existing rent control law in order to stimulate private construction, particularly of rental housing. Provisions of the 1981 housing law which permit higher rates of return to landlords and payment of advance rents could be even more liberal in the returns they permit.

## CHAPTER 1

### Introduction

This is a study about informal housing in Egypt. Seen by some as a source of significant problems and others as a highly productive component of the housing sector, there is much that is not known about it, much that is not known about its relationship to other sectors of housing. The study is designed to provide systematic information about the role of the informal sector in the broader housing sector; the characteristics of those who supply it and occupy it; the characteristics of its dwellings and neighborhoods; and the processes governing its demand and supply. This is not just a study of informal housing, however. For to evaluate the advantages or disadvantages of policies designed to deal with the informal sector, one must know the features of other housing as well--those of the private "formal" or legal sector, and of the public sector. Consequently, whenever possible, the study examines similarities and differences between informal housing and its public and private alternatives.

The geographical focus of the study is on Cairo, the largest Egyptian city, and on Beni Suef, a governorate capital to the south of Cairo. The housing and land use problems in these two cities are typical of those in other Egyptian cities, with rapidly rising housing costs, perceived housing shortages, shortfalls in infrastructure, and conversion of agricultural land to urban uses. Thus the observations to be made in this study will be of more general applicability than simply in the two cities under study.

The data utilized in the study are the products of a substantial field data collection effort and cover a wide range of sources and topics. Three major data collection efforts were undertaken (these are described in more detail in Chapter 2). First was a "scanning survey," an enumeration of some 13,000 dwelling units in Cairo and 4,500 in Beni Suef, which provided information on general characteristics of buildings, including physical attributes and connections to infrastructure, and which also provided a sampling frame for a more detailed survey of the occupants of

those dwellings.<sup>1</sup> Second was a survey of 500 occupants of Greater Cairo housing units and 250 occupants of Beni Suef housing units. This occupant survey was approximately a three-quarter hour to one hour interview which obtained information on a wide variety of characteristics and attitudes of occupants; characteristics of their dwellings, buildings, and neighborhoods; and information concerning processes of acquiring land or property and of building. Finally, there was a series of over 200 in-depth interviews with persons knowledgeable about the processes of housing and infrastructure supply and about policy issues concerning the informal sector. These interviews were directed to contractors, materials suppliers, investors, owners, government officials, legislators and others. Topics covered included inputs to the housing production process such as land, labor, materials, and finance; the subdivision process; the role of the informal sector; and policy issues. A number of these in-depth interviews were geographically focused in case study areas in Cairo and Beni Suef, helping to highlight connections among different participants in the process of housing and infrastructure supply.

The study is organized as follows: Chapter 2 presents the study design, describing in detail the various data collection elements and sampling procedures. Chapter 3 provides background information on recent growth and change in population and housing in Cairo and Beni Suef. Chapter 4 defines informal housing, quantifies its role in overall housing supply, and examines factors responsible for the growth of the informal sector. Chapter 5 looks at levels of infrastructure provision, recent changes, and processes of supply in the informal sector. Chapter 6 examines land and building acquisition and the building process, looking at search processes for formal and informal land and buildings, the operation of labor and materials markets, the construction process, finance of construction, and marketing of housing. Chapter 7 evaluates housing needs and housing outcomes, first examining the relationship between aggregate demand for housing and current supply; the geographical distribution of housing vacancies; evidence of unsatisfied demand for housing such as household "doubling up" and subletting; crowding; tenure patterns and preferences; building, neighborhood service, and environmental outcomes; expressed

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<sup>1</sup> Matching unpublished data from the 1976 Census were also collected to enable aggregate comparisons between 1976 and 1981.

levels of satisfaction with housing and neighborhood features; perceptions of recent changes in neighborhood features and willingness to pay for improvements; and preferences for public versus private housing. Chapter 8 examines housing costs and housing finance, looking at recent trends in housing cost components (land, labor, building materials) and at factors behind these trends, costs of purchasing land or housing, and costs for renters including key money payments. The relationship between housing expenditures and household characteristics such as income, household size, and duration of residence is also examined. Chapter 9 reports on policy issues and current policy instruments for dealing with land, housing, and infrastructure problems and is based largely on in-depth interviews with government officials and legislators. Chapter 10 presents evaluations and recommendations concerning the planning process, legal and administrative procedures, housing finance, and the building process.

## CHAPTER 2

### Study Design

There were three major data collection efforts as part of the study: a scanning (enumeration) survey, a detailed occupant survey, and a series of in-depth interviews. These were conducted jointly by Abt Associates Inc., Dames and Moore, and the General Organization for Housing, Building, and Planning Research (GOHBPR). Major assistance was provided by the Central Agency for Mobilization and Statistics (CAPMAS). Each of the three study components is described in the following sections.

#### 2.1 Scanning Survey

The scanning survey was the first stage of a two-stage probability sample of dwelling units in Greater Cairo and in the city and principal villages surrounding Beni Suef. The survey was designed to:

- Identify aggregate characteristics of housing and infrastructure in each sampled enumeration district;
- Serve as a sampling frame for the detailed occupant survey; and
- Update aggregate 1976 Census information (which was also obtained) for the same enumeration districts in order to permit recent changes in housing and infrastructure to be assessed.

The sample was a cluster sample of 50 CAPMAS census enumeration districts in Greater Cairo and 20 in Beni Suef. For this survey, Greater Cairo was defined to include contiguous urbanized parts of Cairo, Giza, and Qalyubiya governorates and the principal cities, "markaz," in rural hinterlands of Giza and Qalyubiya. In Beni Suef, 10 enumeration districts in the city of Beni Suef and 10 in the villages within the markaz of Beni Suef were chosen. In each city, it was felt that the inclusion of more rural non-contiguous areas would provide a useful contrast to the urbanized contiguous areas. Enumeration districts in each city were randomly chosen, where the probability of being chosen was proportional to the 1976 enumeration district population of dwelling units.<sup>1</sup> The total first stage sampling frame in Greater Cairo was 7,368 enumeration districts; in 1976,

<sup>1</sup>Probabilities of selection were approximately equal for all enumeration districts since CAPMAS procedure is to define enumeration districts in terms of contiguous areas of approximately 200 dwelling units.

these contained 1,585,666 dwelling units. In Beni Suef, the frame comprised 254 enumeration districts, which in 1976 had 70,080 dwelling units. Sample areas in each city are listed in Table 2-1 and, for Cairo, are illustrated in Figure 2-1.

Each enumeration district was visited by a team of trained enumerators from CAPMAS who visited every building in the district, noting characteristics of buildings and infrastructure connections. In Cairo, this enumeration produced a sample of 12,986 dwelling units in 3386 buildings; in Beni Suef, 4452 dwelling units in 3131 buildings.

Data from the survey have been compared to data from other surveys such as 1976 Census data, and appear to produce good estimates of population parameters for sample variables. Appendix 7 presents a brief discussion of sampling issues and compares sample and population estimates for selected variables. Geographical distribution of the sample is broad, although it is likely that there is some undersampling of rapidly growing peripheral areas that had either small populations in 1976 or which did not then constitute enumeration districts. On the other hand, as indicated in the next chapter, the estimated population growth rate from the scanning survey (based on 1976/1981 comparisons) is the same as published Cairo growth rates for the past 15 years, indicating that growing areas are not likely to have been badly undersampled. Another possible sampling bias appears to be in the "City of the Dead," a cemetery area which has been inhabited for some years by urban squatters. The 1976 CAPMAS sampling frame appears to underrepresent the City of the Dead, although this could not be definitively confirmed; thus the sort of informal housing present there may be underrepresented. Aggregate data from both the 1981 scanning survey and the 1976 enumeration district census were coded for machine entry, cleaned, and merged with household data from the occupant survey.

## 2.2 Occupant Survey

The occupant survey was a simple random sample from the 1981 scanning survey frame. Conducted in May and June of 1981, the survey was designed to collect information on:



Table 2-1

Sample Enumeration DistrictsGreater Cairo

<u>Qism</u>	<u>Shiakha</u>
1. at-Tebin	Medinat as-Solb
2. Helwan	al-Masakin al-Iq'sadiya
3. Ma'adi	as-Sori'at ash-Sharqiya
4. Ma'adi	al-Bassatin al'Garbiya
5. Masr al-Qadima	al-Khonha and al-Inaba
6. Masr al-Qadima	Ein as-Sira
7. al-Khalifa	al-'Abagiya
8. as-Sayeda Zeinab	Hada'iq Zeinha
9. as-Sayeda Zeinab	as-Seba'in
10. Kasr an-Nil	az-Zamalek al-Bahriya
11. Bulaq	al-Adawiya
12. al-Azbakia	al-Kolali
13. al-Muski	Darb al-Genaina
14. ad-Darb al-Ahmar ad-	al-Me'garbelin
15. al-Gamaliya	ad-Darassa
16. Bab ash-Sha'ariya	Bab ash-Sha'ariya
17. az-Zahir	as-Sakakini
18. Shubra	at-Teriyā al-Bolakiya
19. Rod al-Farag	'Ibn ar-Rashid
20. Rod al-Farag	al-Mibayada
21. as-Sahel	Borham
22. as-Sahel	Sherif
23. as-Sahel	al-'Amaria
24. ash-Sharabiya	az-Zawia al-Hamra Masakin
25. ash-Sharabiya	al-'Izab
26. ash-Sharabiya	ash-Sharabiya
27. Hada'iq el-Quba	Hada'iq al-Quba
28. al-Wayli	al-Abassiya al-Bahariya
29. Medinat Nasr	al-Muntaza ash-Sharkiya
30. an-Nozha	Cairo Airport
31. Masr al-Gadida	al-Bustan
32. az-Zeitun	az-Zeitun ash-Sharkiya
33. az-Zeitun	Massakin al-'Amiriya
34. al-Matariya	Ezbat en-Nakhl
35. al-Matariya	al-'Garb
36. al-Matariya	az-Zahra
37. al-Matariya	al-Marg al-Kabliya
38. Shubra al-Kheima	Bahtim
39. Shubra al-Kheima	Bigam
40. al-Khanka	al-Khanka
41. al-Ahram	Manshe'it al-Bakari
42. Bulaq ad-Dakrur	al-'Amraniva al-'Garbiya
43. Bulaq ad-Dakrur	Bulaq ad-Dakrur
44. Bulaq ad-Dakrur	'Ard al-Luw'a
45. al-Giza	Harat Rabi'a
46. ad-Dokki	ad-Dokki
47. al-'Aqiza	Mit Okba

Table 2-1 (continued)

Greater Cairo (continued)

48. Imbaba	'Abd an-Na'im (as-Sa'adiya)
49. Imbaba	al-Munira
50. ai-Badrashin	al-Badrashin

Beni Suef

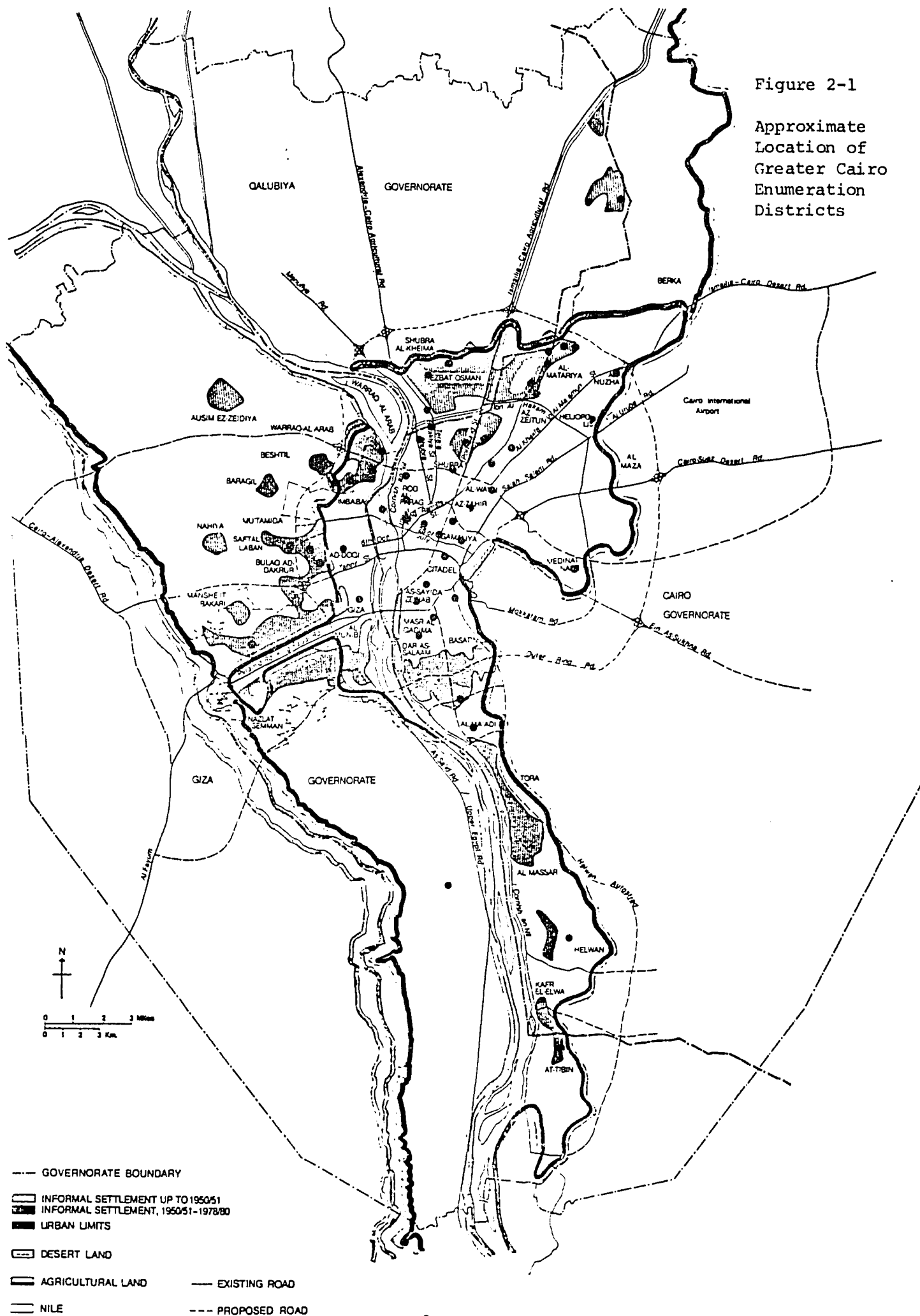
Urban

al-'Gamrawi  
al-Gezira al-'Garbiya  
ar-Ro'gba, al-Gubali  
Mokbil  
Muli'd an-Nabi  
al-Mirna, al-'Izab  
Gomlat al-Medina

Rural

Manqarish  
Beni Harun  
Halabiya  
Be'ad an-Naddara  
Balwiya  
al-Hakamnu  
Termant al-'Garbiya  
'Ahwa  
Barut  
Ikhna ssiya al-Khudra

Figure 2-1  
 Approximate  
 Location of  
 Greater Cairo  
 Enumeration  
 Districts



A. Household Characteristics

- Income;
- Expenditures;
- Consumer Durables;
- Housing Finance;
- Demographic Characteristics;
- Mobility and Migration;
- Attitudes and Preferences Regarding Housing and Infrastructure;
- Informal Housing Sector Attitudes and Behavior;

B. Housing Characteristics

- Building Characteristics;
- Unit Characteristics;
- Access to Infrastructure/Services;
- Housing Costs/Cost Elements;
- Process of Land and Building Acquisition;
- Construction Processes.

In all, data were collected on up to 420 data elements for each household and dwelling unit. In Cairo, 500 households were sampled; in Beni Suef, 250 households. Of Beni Suef households, 130 were in Beni Suef city and 120 in nearby villages. A copy of the survey instrument (in English translation) is included as Appendix 6.

In addition to the data provided from occupant surveys themselves, data constituting "community observations" were obtained when survey team leaders visited enumeration districts to forewarn community leaders prior to full team visits. These community observations included data on area density, who was responsible for land partition or subdivision, predominant social or economic classes, and the presence or absence of a variety of community facilities such as mosques, schools, churches, etc.

Rates of refusal were extremely low for the survey, as were instances of no-one being home when interviewers arrived (interviews were scheduled for early evening hours to have the greatest chance of interviewing heads of household). When instances occurred of either "refusal" or "not at home," households in adjacent units were interviewed in place of previously identified households. Distributions of variables from the occupant survey appear to match quite closely those of comparable variables from the scanning survey (floors per building, units per building, building age, etc.), indicating that the random sampling procedure worked well.

Data for 500 Cairo households and 250 Beni Suef households were coded, machine entered, and cleaned during July and August of 1981. While

response rates to individual survey questions are generally high, there are of course "missing values" for many variables. Thus empirical results presented below are sometimes based on less than full survey populations.

### 2.3 In-Depth Interviews

Approximately 215 in-depth interviews were conducted with persons involved in the supply of housing and infrastructure, or involved in research or policy-making with regard to such topics. These interviews, conducted from March through July 1981, were designed to collect information on the supply processes for formal and informal housing and infrastructure and covering the following areas:

- Legal and illegal subdivision of land;
- Physical infrastructure;
- Building materials;
- Labor;
- Construction;
- Social and other services;
- Finance;
- Marketing;
- Policy issues.

A copy of the checklist of questions for in-depth interviews is included as Appendix 5.

Interviews, which were conducted primarily in Arabic, ranged in length from roughly three-quarters of an hour to two hours. Types of respondents and their approximate percentage distribution included:

	<u>Percent of Respondents</u>
● Government officials;	24
● Legislators;	2
● Financial institutions;	4
● Research organizations;	7
● Consultants;	7
● Owners;	4
● Owner/contractors;	3
● Investors/subdividers;	4
● Contractors;	11

	<u>Percent of Respondents</u>
● Subcontractors;	18
● Manufacturers;	5
● Distributors.	10

While most interviews were geographically dispersed, a number were concentrated among different supply-side participants in areas where informal housing development has recently been active. In Greater Cairo, these interviews focused on Shubra al-Kheima and Dar as-Salaam; in Beni Suef on a number of areas within and around Beni Suef city. Case studies of informal development of housing and infrastructure in these areas were complemented by another location specific analysis in Giza (Kafr el-Gabal). In the latter, the roles of families in the development of a largely informal settlement were investigated, and networks through which construction business were carried out were identified.

Descriptions of the Shubra al-Kheima and Dar as-Salaam case study areas and their recent development are included in Appendix 2; other case study information on these areas has been incorporated into the main text. Appendix 3 is a self-standing case study of the Kafr el-Gabal community, with particular emphasis on families involved in supplying informal housing.

Throughout the study, reference are sometimes made to specific interviews by designating a letter and numerical code (e.g., H.5, J.1). These refer to a list of transcribed interview summaries furnished to AID as part of the study documentation.

## CHAPTER 3

### Growth and Change in Cairo and Beni Suef

Assessing the potential role of the informal housing sector in meeting the needs of the population requires an understanding of the past and current changes in population and housing, their major dimensions, and their underlying determinants. Both Cairo and Beni Suef are growing cities, their population changes being influenced not only by rates of natural population increase of above two percent per year, but also by net in-migration.<sup>1</sup>

Past rates of growth in each city have been fairly constant. From 1947 to 1960, the continuous annual population growth in Greater Cairo was 3.9 percent; from 1960 to 1976, 3.8 percent (Wheaton, 1980, p. 2). This has resulted in roughly a tripling of population from 1947 to 1976 --from about 2.6 million to about 8 million. In Beni Suef, rates of population increase have been lower. From 1966 to 1976, the population of Beni Suef city grew at an annual rate of 3.1 percent.

Despite considerable population growth in each city, it is estimated that housing construction has kept pace with recent population changes. CAPMAS figures, for example, indicate that in Egypt as a whole, the number of urban "families" increased at an annual rate of 3.6 percent between 1966 and 1976, while during the same period the number of urban dwelling units increased at an annual rate of 3.95 percent per year (Wheaton, 1980, p. 50 and GOHBPR, Appendix 8, p. 3).<sup>2</sup> Over the same period, dwelling units in Cairo and urbanized Giza were also estimated to have increased more rapidly than the number of families there (Wheaton, 1980, p. 50).

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<sup>1</sup>The role of migration and other demographic factors in influencing aggregate housing demand is discussed in Chapter 7.

<sup>2</sup>For the urban areas of 24 governorates for which CAPMAS data are available for both 1966 and 1976, 18 experienced more rapid growth in dwelling units than population. Among these 18 were Cairo, Qalyubiya, and Beni Suef where rates of change of dwelling units exceeded population growth rates by 1.9, 1.5, and 1.8 percent per year between 1966 and 1976. In Giza, population growth rates exceeded dwelling unit growth rates by one percent per year over the same period.

Since 1976, it appears that parity has been maintained between population and housing growth in Beni Suef and that housing construction has outstripped population growth in Greater Cairo. Comparison of scanning survey data for Cairo and corresponding Census data in 1976 indicates that between 1976 and 1981 the number of dwelling units grew at an average annual rate of 5.9 percent, whereas the number of occupied dwelling units grew at a rate identical to the rate of Cairo's recent population growth--3.9 percent. In Beni Suef, corresponding figures were 2.1 percent and 2.4 percent respectively.<sup>1</sup> In Cairo, this rapid increase in dwelling units has resulted in a vacancy rate of 5.5 percent of the occupied housing stock and a number of units under construction equal to 4.3 percent of the occupied stock.<sup>2</sup> In Beni Suef, vacancies are estimated to be approximately 3.0 percent of the occupied housing stock; units under construction, 1.9 percent of the occupied housing stock.

The composition of housing stock growth is especially revealing of current trends in Greater Cairo. For example, most of the recent growth in Cairo occurred in the form of additional "apartments" rather than "separate rooms." The annual growth rate of the former (1976 to 1981) was approximately 6.5 percent while that of the latter was only 1.4 percent, resulting in a decrease in the percentage of separate rooms relative to all dwelling units from roughly 16 percent to 13 percent. In Beni Suef city, the increase in separate rooms proportionally exceeded the increase in apartments, resulting in an increase in the percentage of separate rooms in the housing stock from roughly 8 to 11 percent.

The most striking trend, however, is the vertical expansion of the Cairo housing stock that has occurred within the past decade, and especially within the past five years. Table 3-1, for example, compares features of the 1976 and 1981 housing stocks in the 50 CAPMAS enumeration districts sampled for the scanning and occupant surveys. The table indicates a number of salient characteristics of recent housing change:

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<sup>1</sup>These figures for Beni Suef represent an average of city and surrounding village growth rates of 3.9 percent and zero percent per year respectively.

<sup>2</sup>Ninety-five percent confidence intervals for city-wide (Greater Cairo) vacancy rates are 3.8 percent to 7.2 percent. Ninety-five percent confidence intervals for Greater Cairo ratios of units under construction to occupied units are 2.9 percent to 5.7 percent.



Table 3-1

Changes in Buildings, Dwellings, and Floors in  
Cairo Sample Enumeration Districts (1976-1981)

	<u>1976</u>	<u>1981</u>	<u>Average Annual Percentage Change</u>
Buildings	3,050	3,386	2.2%
Dwelling Units	10,047	12,986	5.9
Occupied Dwelling Units	9,902	11,823	3.9
Floors	6,381	8,299	6.0
Dwelling Units Per Floor	1.58	1.57	0.0
Floors Per Building	2.09	2.45	3.4
Dwelling Units Per Building	3.30	3.84	3.3

Source: Scanning survey (1981), unpublished CAPMAS census data (1976).

1. Both dwelling units and occupied dwelling units increased at more rapid rates than did the total number of buildings;
2. The number of floors per building and dwelling units per building each increased by roughly 20 percent (3.4 percent and 3.3 percent annually);
3. The number of dwelling units per floor remained constant.

These changes could be consistent with either of two alternative hypotheses of recent housing change: (1) newly built buildings contained a substantially larger number of dwelling units and a greater number of floors than those in the existing stock, or (2) a considerable degree of vertical expansion of the existing housing stock has occurred.

Data from the occupant survey were used to evaluate these hypotheses. Average numbers of dwelling units and floors per building and dwelling units per floor were estimated for buildings estimated to have been constructed during four periods--before 1960, 1960 to 1970, 1971 to 1976, and after 1976.<sup>1</sup> Table 3-2 presents the results from that survey.<sup>2</sup> As the table indicates, the average numbers of floors per building and dwelling units per building for buildings built after 1976 are lower than those of all preceding

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<sup>1</sup>In the occupant survey households were asked directly to estimate the age of their building. Responses to this question on the occupant survey corresponded well with CAPMAS enumerators' estimates of building age as part of the scanning survey. For example, a regression of the estimated number of dwellings built between 1976 and 1981 obtained by subtracting enumerated 1976 units from enumerated 1981 units or the number of units estimated to be built during the same period based on occupant survey responses resulted in a regression slope statistically indistinguishable from 1.0; e.g., the estimated rate of addition of units to the stock between 1976 and 1981 is the same based on either the scanning or the occupant survey.

<sup>2</sup>Characteristics of buildings were estimated by weighting each household observation in the occupant survey by the reciprocal of the estimated number of units in the household's building--where such a weight is equal to the probability that a household in a particular building would be randomly chosen in the occupant survey. Were this not done, households in buildings with many units (whose buildings had a greater chance of being randomly selected than households in buildings with few units) would be given too much importance in determining outcomes. As the table indicates, this weighting produces average building characteristics that are quite close to the enumeration district averages presented in Table 3-1, indicating that the occupant survey sampling procedure worked well.

Table 3-2

Average Characteristics of Buildings Constructed in  
Different Periods (Greater Cairo)

	<u>Estimated Year of Construction</u>				<u>Average</u>
	<u>Before 1970</u>	<u>1960- 1970</u>	<u>1971- 1976</u>	<u>After 1976</u>	
Dwelling Units Per Floor	1.43	1.56	1.64	1.28	1.48
Floors Per Building	2.78	2.72	2.45	2.25	2.65
Dwelling Units Per Building	3.99	4.25	4.01	2.87	3.93

Source: Weighted occupant survey.

periods. Dwelling units per floor in post-1976 buildings are also lower than those of pre-1976 buildings.<sup>1</sup> These data strongly suggest that the increase in floors per building and dwelling units per building is the result of vertical expansion of existing buildings rather than a recent shift toward higher density new buildings.

Further confirmation of the role of modifications to the existing stock can be gotten from the occupant survey. Interviewers estimated the age of building "additions" as part of that survey. Analysis of those data indicated that 37 percent of all residential buildings in Greater Cairo had had additions at some time in the past, but that 28 percent of the total had additions between 1971 and 1981, and 21 percent of the total had additions since 1976--indicating an enormous upsurge in the rate of building additions within the past five years.<sup>2</sup>

Additional insight into the nature of housing stock changes is provided by renters in the occupant survey, who were asked whether or not the number of dwelling units in their building had changed over time and, if so, how the change had occurred. Table 3-3 presents the survey results. The table indicates similar patterns of change in the rental housing stock in Cairo and Beni Suef, with, respectively, 28 and 18 percent of renters having observed increases in the numbers of units and only one and zero percent having observed decreases. Expansions that did occur are dominated by additions of apartments (86 percent and 94 percent of additions perceived in Cairo and Beni Suef respectively), rather than by additions of separate rooms or sub-division of apartments. Indeed, the impression that subdividing is unimportant is reinforced by the slow rate of change in separate rooms between 1976 and 1981 and the stability over time in the number of dwelling units per building.

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<sup>1</sup>That recently built buildings have fewer dwellings and floors than existing buildings is almost certainly the result of the incremental building process typical in Egypt; recent buildings are simply observed at an earlier stage of development than older buildings. It is likely that ultimate densities of post-1976 buildings will at least equal and probably exceed those of pre-1976 buildings.

<sup>2</sup>Scanning survey and 1976 census data indicate that there is a strong negative relationship between building height in 1976 and the change in building height from 1976 to 1981. In enumeration districts having roughly two floors per building in 1976, between .75 floors and one floor were added on average by 1981; for enumeration districts with from 4 to 5 floors per building in 1976, only about 0.1 floors per building were added during the same period.

Table 3-3

Perceived Changes in Numbers of Units by  
Renters in Their Building (Percent)

"Have there been any changes in the number of dwelling units in this building since you moved in?"

	<u>Cairo</u>	<u>Beni Suef</u>
No change/don't know	71%	81%
Increase	28	18
Decrease	1	0

"What were those changes?"

	<u>Cairo</u>	<u>Beni Suef</u>
Building one or more apartments	86%	94%
Building one or more rooms	4	0
Dividing some apartments into smaller ones	1	0
Dividing some apartments into separate rooms	2	0
Other	7	6

Source: Weighted occupant survey.

Within the past five years, vertical expansion of existing buildings has possibly been even more important than new construction in adding units to Cairo's housing stock. Approximate estimates of the comparative role of new construction and vertical expansion can be gotten based on a number of parametric assumptions applied to scanning and occupant survey data. On the basis of such a parametric analysis, it seems likely that units added from the existing stock (primarily through vertical expansion) have comprised from roughly half to two-thirds of the additions to Cairo's housing stock within the past five years.<sup>1</sup>

The trends observed in this section, principally rapid expansion of the housing stock and an important if not dominant role for adding units from the existing stock, are consistent with a large flow of resources into the housing sector, a concomitant increase in land prices, and a shift toward more land intensive urban development. This is discussed at greater length in Chapter 6. It is worth noting here, however, that the ability of the housing sector to meet demand by modification

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<sup>1</sup>There were estimated to be 1,585,666 dwelling units in the enumeration districts comprising the sampling universe from which the scanning survey sample was drawn. Applying the estimated 1976-81 growth rate for all (occupied and unoccupied) dwelling units produces an estimate of 2,049,513 dwelling units in Greater Cairo in 1981. Buildings in 1976 and 1981 may be estimated by dividing estimated dwelling units by estimated dwelling units per building from the 1976 and 1981 surveys (3.30 and 3.84 respectively) to get 480,505 and 533,727 buildings respectively. Multiplying the net change in buildings, 53,222, by the occupant survey estimate of 2.87 dwelling units per building for buildings constructed between 1976 and 1981 gives an estimate of 152,747 units added by new construction during those years. (This requires an assumption that the number of units per building is the same in new occupied and unoccupied buildings. Since the occupant survey is conducted only in buildings that are at least partially occupied, the sample is skewed toward characteristics of occupied buildings.) This represents 33 percent of the estimated net change in dwelling units, the other 67 percent being made up of additions from the existing stock--primarily vertical expansion. If, alternatively, it is assumed that units per building for unoccupied buildings are twice the average for occupied buildings (5.74--perhaps because larger buildings are more expensive and hence take longer to complete or more likely to be held from the market by speculators) and that unoccupied buildings comprise 20 percent of all new buildings (strictly an assumption since only aggregated scanning survey data rather than building level data were coded), then  $.2 \times 53,222 = 10,644$  new unoccupied buildings,  $42,578 \times 2.87 = 122,199$  units for a total of 183,296 units--39.5 percent of the estimated 1976-1981 change. Assuming new unoccupied buildings to have ten units each would raise the percentage added through new construction to 49 percent; additions to the existing stock would comprise the other 51 percent.

to the existing stock demonstrates an important area of flexibility in adapting to market conditions. In considering strategies to support expansion of housing resources or their redirection to low and moderate income households it may be preferable to harness existing trends toward vertical expansion than to rely on strategies based on development patterns that are less well supported by the current marketplace.<sup>1</sup>

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<sup>1</sup>In many cases such vertical expansion is well within the technical and structural capacity of the informal sector, most often involving nothing more than adding an additional story to a one-, two-, or three-story structure.

The Role of the Informal Sector

Informal housing means different things to different people. As a result, while the importance of informal housing in contributing to the expansion of Egypt's housing stock is widely conceded, estimates of its quantitative significance vary greatly.

One approach to defining informality is to rely on the legal status of housing. For housing in Egypt to be "formal" or legal, it must be in an officially approved subdivision (which enables an owner to legally register his land), and must have been built with a building permit (which enables an owner to legally register a building). There may, nevertheless, be degrees of informality, several of which have been identified in areas of Cairo and Beni Suef. Among these are:

1. Dwellings constructed on illegally-occupied land not included in a legal subdivision. Examples of this are temporary or permanent structures situated on (1) public land abutting a canal or right-of-way or (2) private land (vacant land included in a factory yard, commercial lot or vacant land comprising part of a building site slated for non-residential construction).
2. Dwellings constructed on illegally-occupied land included in a legal subdivision. Examples of this are temporary or permanent structures situated on private residential building lots where the land owner is absent, on rights-of-way, or in public open spaces.
3. Dwellings constructed on legally-owned land not included in a legal subdivision. Examples of this are temporary or permanent structures situated on private land included in a parcel (1) which has been subdivided and sold by a subdivider without obtaining a permit to subdivide and re-sell land and (2) in which no zoning regulations are complied with.
4. Dwellings constructed on legally-owned land included in a legal subdivision. Examples of this are permanent dwellings situated on private land zoned for residential use and included in a subdivision which has been legally subdivided, and where the subdivider has complied with most or all zoning regulations, but has built without a building permit or without adhering to the building codes, despite having received a permit.



Levels 1 and 2 are representative of the highest degree of informality and are by definition situations of squatting. In other countries these housing types make up the bulk of what is perceived to be informal housing. In Egypt, however, field observation and direct questioning in the occupant survey suggested that these two types comprise a comparatively modest share of the housing stock. Most dwellings in the informal sector appear to be illegal by virtue of the owners having failed to adhere to subdivision or building permit regulations.

Whatever the precise definition, it is clear that most people believe the incidence of informal housing to be high. For example, many participants in in-depth interviews were asked to estimate the proportion of informal housing in their area and in Cairo as a whole. In those interviews, the Arabic phrase "'gair rasmy," which literally means "not legal," was used for "informal."

One "baladi" (popular housing) contractor said that 90 percent of current construction in the country as a whole is informal; a Dar as-Salaam contractor, "seventy percent of Cairo's housing is informal"; a Kafr el-Gabal contractor estimated that 90 percent of the construction in his area was without permits; a Bulaq ad-Dakrur steel rod distributor thought the local informal proportion 60 to 70 percent; a Bulaq ad-Dakrur subdivider said that of 2,000 housing units in his area, only 10 had permits. A Beni Suef engineer thought the informal proportion 80 percent.

Government officials tended to give lower estimates. One Cairo governorate official thought 30 to 40 percent a more reasonable figure for his governorate.

Perhaps the best quantitative estimate of the role of the informal sector has been presented in a recent World Bank/GOHBPR "Construction Industry Study." In that study, observed intercensal changes in the 1966 and 1976 housing stocks were compared to permit and registration data throughout Egypt. By subtracting recorded legal units from the change in housing stock, it was estimated that nationwide, about 77 percent of all housing units built between 1966 and 1976 were informal.<sup>1</sup> Further breakdowns in

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<sup>1</sup>GOHBPR, 1981, Appendix 8. It should be noted that while the study presents a figure of 71 percent informal housing (Figure IV, p. A.8.15), this is a typographical error. The actual figure (77 percent) can be calculated based on data presented in Figure IV.

that study suggested that the urban and rural proportions of informal housing were 77.4 percent and 74.6 percent respectively.

Such figures are likely, in fact, to be underestimates of informal housing construction because of an analytical shortcoming in their computation; namely, the GOHBPR computation fails to take into account replacement of losses from the housing stock through demolitions, conversions to other uses, etc. That is, to estimate the number of units built between two census periods, it is necessary to estimate the net change in the stock (which the GOHBPR study does) and then to add an estimate of removals from the stock (which the study does not do). If one assumes gross removals from the stock to average one percent per year (10 percent between censuses), then some 583,000 more housing units would have to have been added between 1966 and 1976 than the study estimated. If these are allocated to the urban and rural sectors in proportion to their 1966 housing stocks, and are assumed to have been replaced by informal construction, then one estimates that the informal proportion of new urban and rural construction between 1966 and 1976 was 81 percent and 89 percent respectively.

In this study, the incidence of informal housing among owners was estimated on the basis of direct questions in the occupant survey, namely:

For those who built on vacant land

"Have you registered the land?" and "Did you get a building permit from the appropriate authorities to build or make additions to the dwelling?"

For those who acquired an existing dwelling

"Have you registered the property?" and, if they modified or added to it, "Did you get a building permit from the appropriate authorities to build or make additions to the dwelling?"

Squatting or violation of subdivision requirements would be expected to result in failure to legally register either land or buildings, and failure to get a building permit, while itself illegal, could also result in failure to register the property. Thus, each of the levels of informality described above is encompassed by various combinations of responses to these questions. Weighted responses to each of these questions are given in Table 4-1.

Responses indicate high rates of noncompliance with both registration and building permit requirements. A majority of owners in each site failed

Table 4-1

Components of Illegality Among Owners  
(Percent Responding to Each Survey Question)

	<u>Cairo</u>	<u>Beni Suef</u>
Registered land?		
Yes	44%	12%
No	56	88
Registered building?		
Yes	62	8
No	38	92
Got building permit?		
Yes	27	32
No	73	68
 <u>Combined Responses</u>		
Registered land (if built on vacant land) or registered building (if acquired existing building)?		
Yes	49%	9%
No	51	91
Registered land or building (as appropriate) and got a building permit (if built or added to existing structure)?		
Yes	36	8
No	64	92
Sample Size	143	171
Sample size including missing values	154	175

Source: Weighted occupant survey

to register land or obtain building permits when required. Purchasers of existing buildings in Cairo were more likely than not to have registered their buildings (they did so in 62 percent of cases), although the reverse was overwhelmingly the case in Beni Suef (where 92 percent of purchasers had not registered buildings).

Combining responses to questions permits one to estimate the incidence of informal housing under two alternative definitions--one which relies only on whether registration requirements were met and another, more stringent, which relies on meeting both registration and building permit requirements. In either case, the majority of all owner-occupied housing in Cairo and Beni Suef is estimated to be informal--regardless of its time of construction. In the case of the less stringent definition, 51 percent and 91 percent respectively of Cairo and Beni Suef owner-occupied housing are estimated to be informal; using the more stringent definition, 64 percent and 92 percent respectively are estimated to be informal.

Among renters that were surveyed, questions concerning registration by owners and obtaining building permits could not have been expected to elicit reliable answers and thus were not asked. Consequently, the incidence of informal housing among renters was estimated statistically based on the observed association between informality among owners and selected building and area characteristics. This was done using a multivariate regression analysis which permitted an evaluation of the contribution of each building and area characteristic to the likelihood that a given unit was informal. Regression equations were then used to predict whether or not a given renter household was living in formal or informal housing.<sup>1</sup> Separate equations

<sup>1</sup>The estimated probability,  $\hat{p}_j$ , that a particular household,  $j$ , was in an informal unit was:

$$\hat{p}_j(I) = \hat{\alpha} + \sum_{i=1}^N \hat{\beta}_i X_{ij}$$

where  $\hat{\alpha}$  and  $\hat{\beta}_i$  are estimated regression equation parameters ( $i=1, \dots, N$ ) and  $X_{ij}$  is the value of the  $i$ th variable for the  $j$ th household. The average likelihood that a renter household was in an informal unit was estimated by averaging the estimated probabilities.

$$\hat{\bar{p}}_j(I) = \sum_{j=1}^m (\hat{\alpha} + \sum_{i=1}^N \hat{\beta}_i X_{ij}) / M$$

A criterion was then established for assigning a given household to "informal" or "formal" status based on whether its predicted probability of being informal was greater or less than a given "critical" level,  $p^*$ .  $p^*$  was chosen such that the proportion of estimated "informal" households was equal to the estimated overall average likelihood that a rental unit was informal,  $\hat{p}(I)$ .

were estimated for each site, including the following variables:

Area Characteristics

1. Medium growth area (10-50 percent growth in units, 1976-1981)
2. High growth area (greater than 50 percent growth in units, 1976-1981)
3. Area classified "agricultural land"
4. Area classified "desert land"
5. Land in area subdivided (partitioned) by the government
6. Land in area subdivided by private individuals or cooperatives
7. Area classified primarily "middle to upper class"
8. Area classified primarily "popular" or "historic"

Building Characteristics

1. Built since 1976
2. Built 1971-1976
3. Built 1960-1970
4. Stone exterior walls
5. Elevator in building
6. More than one stairway in building
7. Two stories or less
8. Six stories or more
9. Natural logarithm of number of units in building
10. "Separate rooms" in building
11. Shops in building
12. Building condition "good"
13. Building condition "bad"
14. Building condition "about to collapse"
15. Paved road access
16. Graded road access
17. Located on less than 3m. road
18. Located on greater than 8m. road

Estimated regression parameters are presented in Appendix 1. Major variables contributing significantly to informality in Cairo include being located in a high growth area or in an area classified primarily as agricultural land, which increase the probability of informality by 28 and 31 percentage points respectively, and being located in areas classified primarily as desert land or partitioned by the government, which decreases the probability of informality by 69 and 36 percentage points respectively. Building characteristics are generally not highly related to the likelihood that an owner-occupied unit is informal. In Beni Suef, being located in an area partitioned by the government decreases the likelihood that a unit is informal by 46 percentage points; buildings with stone exteriors are less likely to be informal; with separate rooms, more likely to be informal.

Based on the estimated regression equations, the proportions of renters' units estimated to be informal in Cairo and Beni Suef, respectively, are 60 and 87 percent--in each case, slightly lower than corresponding estimates for owners. Combining estimates for owners and renters, 62 percent of all Cairo housing and 87 percent of all Beni Suef housing is estimated to be informal.

In recent years, higher proportions of units being added to the stock are estimated to be informal. Estimates from the occupant survey are, in fact, remarkably similar to those of the previously discussed GOHBPR/World Bank study. Of units built in Greater Cairo between 1970 and 1981, approximately 84 percent are estimated to be informal; during the same period in Beni Suef, 91 percent of units added are estimated to be informal. Table 4-2 provides a more detailed breakdown of changes over time in the estimated proportion of informal housing. The table indicates no discernable pattern over time of the incidence of informal housing in Beni Suef. In Cairo, however, the table indicates a general rise over time (through the 1971-76 period) in the proportion of informal housing in Cairo. Since the 1971-76 period the proportion of newly added informal housing appears to have fallen somewhat--from about 89 percent to 75 percent of additional units.<sup>1</sup>

Despite the generally high incidence of informal housing in Greater Cairo, much of it is highly concentrated geographically. Figure 4-1 indicates principal areas thought to be largely informal in 1981, and indicates changes in the geographic extent of such areas since 1950/1951.<sup>2</sup> As the map indicates, growth of informal areas has been particularly extensive in areas south of Cairo such as Dar as-Salaam and Helwan, west of Cairo in Giza, and north of Cairo in Shubra al-Kheima.

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<sup>1</sup>This fall in the estimated proportion is significant at above the 90 percent confidence level.

<sup>2</sup>The geographic extent of informal housing areas in 1950/1951 and 1981 was established based on examination of maps, site visits, and interviews with governorate officials and private parties.

Table 4-2

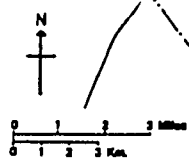
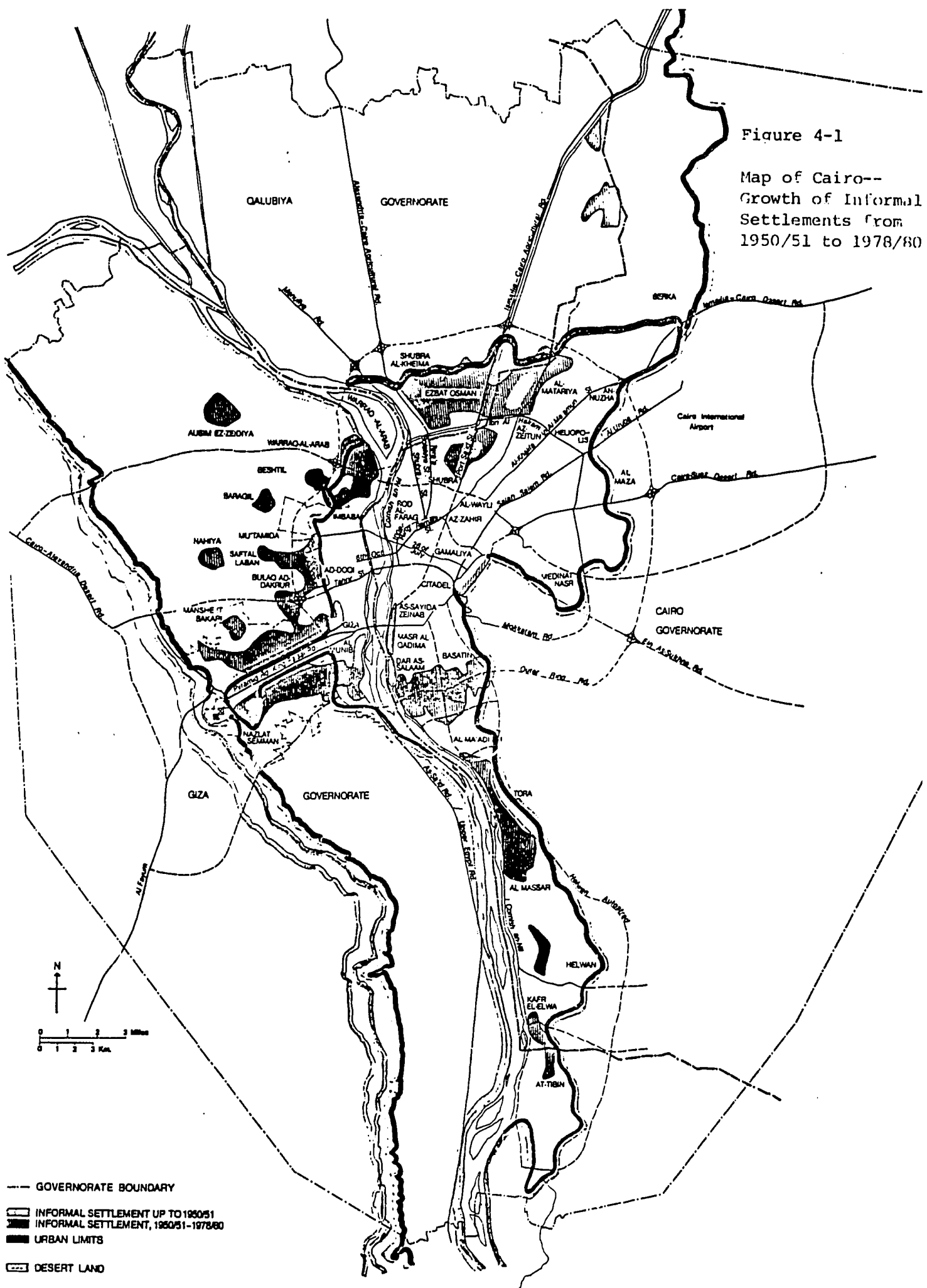
Incidence of Formal and Informal Housing by Time of Construction<sup>1</sup>  
(Sample Sizes in Parentheses)

<u>Time of Construction</u>	City					
	Cairo			Beni Suef		
	<u>Informal</u>	<u>Formal</u>	N	<u>Informal</u>	<u>Formal</u>	N
Before 1960	43.7%	56.3%	(212)	91.5%	8.5%	( 76)
1960 - 1970	72.2	27.8	(133)	80.3	19.7	(102)
1971 - 1976	88.8	11.3	( 76)	92.5	7.5	( 58)
After 1976	75.0	25.0	( 36)	78.2	21.8	( 8)

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<sup>1</sup>Source: Weighted Occupant Survey. Note that percentages multiplied by sample sizes do not usually give integer results because of weighting procedures.

Figure 4-1  
 Map of Cairo--  
 Growth of Informal  
 Settlements from  
 1950/51 to 1978/80



- GOVERNORATE BOUNDARY
- ▭ INFORMAL SETTLEMENT UP TO 1950/51
- ▨ INFORMAL SETTLEMENT, 1950/51-1978/80
- URBAN LIMITS
- ▤ DESERT LAND
- ▧ AGRICULTURAL LAND
- EXISTING ROAD
- PROPOSED ROAD
- NILE



In addition to growth in such areas, which are geographically contiguous to previously urbanized areas of Greater Cairo, informal housing has also grown in non-contiguous areas such as the "markaz" and agricultural villages in Giza and Qalyubiya governorates. Growth of informal areas in Beni Suef, which are indicated in Figure 4-2, has been relatively slower than that in Cairo.

The geographical concentration of informal housing is also indicated by occupant survey data. Based on those data, 44 percent of surveyed enumeration districts had from 76 to 100 percent informal housing, while 26 percent of districts had from 0 to 25 percent informal housing. Thus only 30 percent of districts had any significant degree of "mixed" formal and informal housing (from 26 to 75 percent of either type).

#### 4.1 Factors Contributing to the Growth of Informal Housing

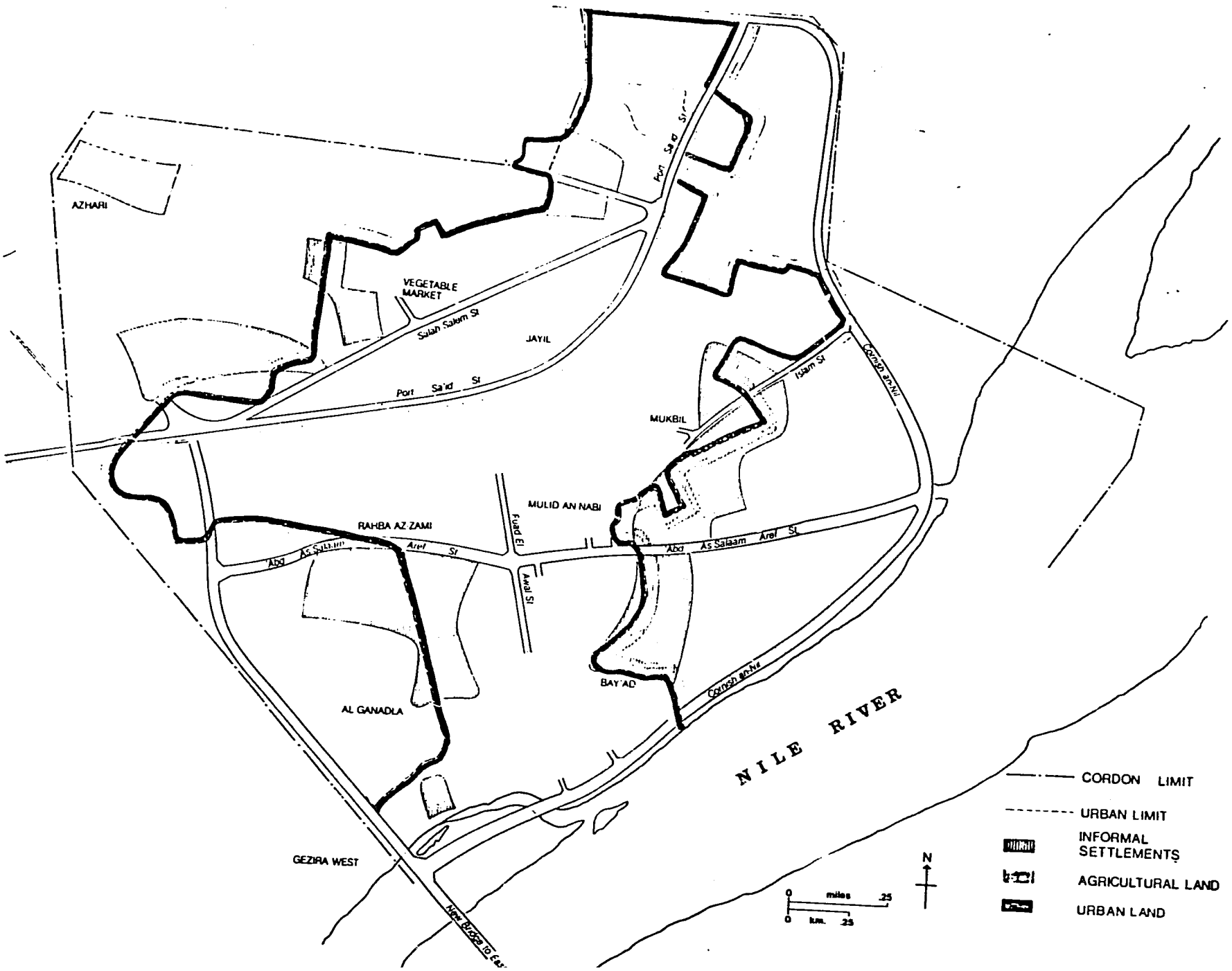
Informal housing occurs when land and property owners either fail to comply with subdivision requirements, resulting in their inability to register land and property legally, or to obtain building permits. Policies to deal with informal housing must be based on an understanding of factors responsible for each source of illegality. This section examines the processes by which subdivision and building occur, and looks at factors which affect violation of subdivision and building permit regulations.

The principal aspect of illegal subdivision is the conversion of agricultural land to urban uses, which is, in general, proscribed by Law 52 of 1940 and 1975. There is great concern that the rate at which such conversion is occurring seriously threatens Egypt's ability to be self-sufficient in food production. The 1979 ARE Housing Plan, for example, estimated that some 60,000 feddans (25,210 ha.) per year of agricultural land were being "lost" mainly to urbanization, threatening a reduction of arable land by some 20 percent by the year 2000. While these numbers may be too high, there is nevertheless concern that urbanization and food self-sufficiency are currently in conflict and, given the continued incursion of housing into agricultural hinterlands, are likely to remain in conflict for some time.

If urban expansion into agricultural areas is to be controlled, one must first understand the processes by which expansion and illegal subdivision are occurring, and the factors which influence the rate of conversion of agricultural to urban land.

Figure 4-2

Map of Beni Suef--Informal Settlements



#### 4.2 Subdivision

The majority of informal housing in the case study areas and in many other parts of Cairo have been situated on land which was illegally subdivided, i.e., subdivided in contravention of procedures and standards dictated by Law 52 of 1940 and 1975. According to planning officials interviewed, this law has been ineffective since enactment. The great majority of the subdivision requests made to the Governorate of Cairo are rejected. In many cases, no such application is made. Once neighborhoods are established in illegal subdivisions, the law is virtually impossible to enforce. Even when a citation is made early after the subdivision has been established, it is difficult to remove people who have bought parcels and constructed houses on them. The city can sue the subcontractor for violation as well as the individual parcel owners, but the sanction on the individual's right to develop private property protects the subdivider and property owner in most cases. The first phase of the informal housing supply process is best described by a number of examples taken from the in-depth interviews.

A Dar as-Salaam subdivider was allocated 3 feddans from his family's 20. Without the help of a planner or architect, without formal application, he divided the area into lots of 100 to 300 square meters and 8 meter wide streets. Purchasers of lots have an incentive to relinquish land for streets: if a main road is eventually constructed the value of his land will rise--street lots are often twice the price of off-street lots. He kept one lot for himself and sold the rest.<sup>1</sup> He said there was only one formal subdivision in the area.

A Basatin subdivider, a former fellah, set up The Cooperative for Land Subdivision. He subdivided two "big pieces" of registered land and five feddans of unregistered agricultural land. More recently he has bought one to two feddan parcels from others and subdivided them. He also engages in construction--without any permits. His subdivided lots are 100 to 300 square meters; he "gives" 2m to the street, as does

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<sup>1</sup>In general, however, purchase and resale of part of the original amount of land appears not to be prevalent. Only 3 percent and 4 percent respectively of Cairo and Beni Suef owners who built on land and who were surveyed in the occupant survey reported that they had sold any of their original purchase of land. Thus, individual purchasers appear to buy only what they personally need from subdividers.

each person to whom he sells a lot, making 6m wide streets. He claimed responsibility for introducing water, electricity and sewage into the area.

Another developer in the same area reported that farmers subdivided the land in the 1960s and then real estate developers moved in and made 200 percent rates of profit. Such rates of profit appear to be typical even now for agricultural to urban land use conversion given the spread between agricultural and urban land prices.

A Manshe'it Sadat carpenter returned from five years in Kuwait, bought 1 kirat (175 sq.m.) of agricultural land from a subdivider. This previous owner originally had 100 feddans, but he sold 20 to someone else to finance his development of the rest.

Early in this survey, a newspaper advertisement appeared offering land for sale in el-Mazabi and Tenth of Ramadan. An interviewer visited this businessman's office in Ezbat en-Nakhl on the day of the advertisement, along with many other interested parties. He was offering 20 to 30 sq.m. parcels, 30 to 50 percent down, 2 to 4 years to repay. The "developer" preferred to deal in agricultural land "because services are easy" to obtain.

Informal development is not always on private, agricultural land. Manshe'it Nassar, for example, was built upon government land in the 1960s. The inhabitants appealed successfully to the President when a government department threatened to bulldoze the area.

At the high end of the formal market, public sector and private companies play a role in subdivision and development. For example, one such developer, the Ma'adi Company, was set up with British support in 1905. The Company originally subdivided much of Ma'adi into 1,050 sq.m. lots. The few remaining lots in the area are being developed as condominiums. The rules are that only 50 percent of the lot can be built upon 3-4m setbacks all around, with a 5 story maximum.

#### 4.3 Factors Contributing to Illegal Subdivision

The decision to subdivide land illegally is based on several factors related to land prices, property taxes, existing subdivision regulations, water availability, and access roads. The last two of these factors will be covered in Chapter 5.

## Land Prices

Residential land prices have increased steadily since 1970 when the informal housing phenomenon began to gain momentum. Average prices ranged from LE 2/m<sup>2</sup> to LE 4/m<sup>2</sup> in the late 1960s, from LE 6/m<sup>2</sup> to LE 10/m<sup>2</sup> in the mid-1970s, and are currently LE 30/m<sup>2</sup> (periphery--Shubra al-Kheima) and LE 60 to LE 100 and sometimes higher than LE 200 for prime residential and commercial locations in central and high income areas. Land prices in Beni Suef have been somewhat lower. In the 1960s they rarely exceeded LE 2/m<sup>2</sup>, in the mid-1970s averaged LE 4 to LE 6/m<sup>2</sup>, and currently range from about LE 20/m<sup>2</sup> and higher depending on proximity to facilities and prime commercial locations. The willingness to pay these prices varies according to the importance the homeowner places on location. Most seem to be more concerned with proximity to social facilities and/or existing or proposed infrastructure than with proximity to place of employment.

At the same time residential land prices were rising, prices for agricultural land were often stable in real terms, or even falling. This sometimes resulted from the filling of irrigational canals with non-biodegradable garbage and solid waste by residents of nearby residential areas, or by contamination of canals by industrial wastes. As residential land prices began to far exceed the return that a landowner could receive from keeping land in agricultural use, landowners predictably responded by selling land for residential use at the new high prices.

People who could afford to invest in land suitable for residential use bought as much as possible for speculative reasons (usually by feddan --4,201 sq.m.). People of more modest means bought larger lots than required for their homes (usually by kirat--175 sq.m.) so they could either expand their homes or resell unbuilt portions of their lots at a later date. Workers' remittances often provided the capital for the second group and for lower income people who in many instances bought only by the square meter, and only enough land to construct a small dwelling which could later be expanded vertically.

## Property Taxes

Taxes on vacant land at the rate of two percent of the appraised valuation have been introduced to reduce speculation. These taxes are sometimes alleged to have resulted in owners (1) subdividing and selling

parcel by parcel to reduce the increasing tax burden of ownership, or (2) selling whole feddans to "contractors" or developers who subdivide land and resell it by kirat or square meter over a very short period of time to avoid tax payments. This latter situation was reported by interviewers to be very profitable.

#### 4.4 Existing Subdivision Regulations

Legal subdivision may occur either on agricultural land, with proper variances, or on non-agricultural urban land. In either case, procedures are time consuming and costly, and the chances of success are small.

Subdivision of agricultural land can legally occur only under special conditions set forth by the 1978 Agricultural Law, which vests authority in the Ministry of Agriculture to develop land defined as agricultural by the Land Reclamation Act. Prior to 1978, local officials and not the Ministry of Agriculture had authority to control subdivision of agricultural land (regardless of their success at enforcement) and to require that subdividers comply with requirements facilitating the cost-efficient provision of infrastructure. Currently, if land being subdivided has been identified as agricultural, this very definition exempts the land from local government subdivision control because under the law it has been categorized as non-developable regardless of what the owner is using it for. However, if the owner wants to subdivide his land, he can get a variance by persuading the authorities that his land is "non-cultivable." Examples of subdivision activities created by using loopholes in existing laws are:

- An individual subdivides land to accommodate family members. There is often no policing to confirm that subdivision is taking place for this purpose rather than to provide parcels for non-related buyers.
- Persons calling themselves "contractors" buy up "non-cultivable" agricultural land, compensate the landowner and farm laborers living on the land, and re-sell parcels for residential use--often deriving a profit of 100 percent or more. In most cases, these "contractors" are not contractors by definition but transferrers of land and are inflating land prices and encouraging informal development.

- A landowner installs a facility which is considered to be a contribution to the "Food Security" Program, i.e., an individual can start a poultry farm and on the same site install housing for "employees" of that facility. He does not necessarily have to prove that the occupants of housing in this situation are indeed employees. This type of subdivision is not considered residential subdivision under existing laws.

The procedure for obtaining variances is, however, lengthy. First, a governorate committee has to be formed to evaluate the petition: the local inspectors of housing and education and the local agricultural manager. The committee inspects the property to make sure that all general codes are being followed (e.g., at least 100m from a canal). Once the committee has approved the application in writing, the Minister of Agriculture has to set up a review committee: vice-ministers of agriculture, industry, education, planning and housing. A fee of LE 20 per feddan is charged. This money goes towards reclaiming desert lands.

Not surprisingly, few applications are made. Village leaders in Ikhnessiya al-Khudra, near Beni Suef, where governorate officials claim the law is enforced, said fewer than five percent of the applications succeeded, too discouraging for most people who might consider obtaining permission.

Subdivision of non-agricultural land is apparently not much easier than that of agricultural land. Respondents in the in-depth interviews complained that the application procedure for obtaining a subdivision permit is too expensive and time consuming to make it worthwhile to go through legal channels. In addition to regular fees attached to application, potential subdividers must hire an architect or planner to prepare subdivision plans to be submitted to officials. "Official" architect and syndication fees appear to range from 10 percent of project costs for small projects to 2 percent for large projects. The review process usually takes six months or more and there is no guarantee that permission will be granted in the end. Respondents say that they would rather risk going ahead and subdividing illegally than to have to go through the bureaucratic maze of application and confirmation.

Many subdividers resent the standards included in the subdivision law requiring 10m. road widths and allowances for public uses because they think they are excessive and irrelevant to the indigenous population. Although some illegal subdividers will allow a one-to-two meter right-of-way

fronting building lots and a minimal amount of open space for public use, the majority do not. They will instead shift the responsibility concerning setbacks for roads to the homebuilder.

While illegal subdividers close to existing main line infrastructure sometimes provide extensions to newly subdivided areas, they do not always feel compelled to provide any basic infrastructure. Subdividers know that once subdivision becomes a neighborhood and residents go to register their land or lobby collectively through their local neighborhood councils that residents will eventually obtain public facilities and infrastructure. They also know, from observing the informal process, that the government will also take land by expropriation from private landowners or use adjacent public land to install social facilities like mosques, churches, schools and hospitals.

#### Land Registration

Under existing laws, all rights of privately held property must be transferred legally and registered with the local district office of the Land Registration Division of the Ministry of Justice.<sup>1</sup> The majority of land owners in the informal sector do not register their property and are rarely reprimanded for not doing so.

Larger landholders, 10 feddans or more, have an informal way of registering which confirms that a transfer has been made. The seller goes to court with the buyer and the seller alleges partial non-payment for land on the part of the buyer. The court then charges, in writing, that the buyer must pay the unpaid amount, and a court order is issued. The buyer then pays and receives receipt from the seller. To many people in the informal sector, this action constitutes a form of registration and they go no further to guarantee formal registration.

Persons buying land by the kirat or square meter rarely register their land but instead will go to their local district office after they have finished building their houses and register their lot numbers and addresses so that they may be eligible for postal and communication service.

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<sup>1</sup>The fee is 2 percent of LE 1,000 or less; 4 percent of LE 3,000, and 7 percent for LE 4,000 or more. There is also an application fee of LE 2.



Individuals almost always wait until building completion to do so, if they do at all, in order to avoid citation for informal construction because the vast majority have not obtained a building permit.

Many people are cited and fined when they have constructed the foundations or first floor but are not removed by authorities in most cases unless they are building in a public area or on government land. Often people said that they considered a written and dated citation as informal proof that they had started their building on their land. They know authorities will not return with a removal order for several weeks or even several months and by that time they will have constructed the second floor and cannot be removed. Periodic rulings from the governorates and/or the National Assembly declaring all informal dwellings to be formal confirms their presumption that they will not be punished or removed because they have not registered their land or obtained a building permit.

#### 4.5 Design Characteristics of Illegal Subdivisions

Subdividers of illegal subdivisions rarely comply with standards for street width and public open space and do not use architects to devise any street layout design. Consequently, every informal development established within the boundaries of these subdivisions has its own characteristics determined by the existing street pattern and buildings, topography, and natural and man-made features, e.g., channels or irrigation canals.

The three main siting configurations, irregular, linear, and fragmentary, are depicted in Figure 4-3.

Linear patterns are representative of at least 70 to 80 percent of the study areas. A typical linear settlement established on vacant flat land, Ezbat Osman, is depicted in Figure 4-4.

The subdivision of land into 60 to 80 sq.m. lots and the linear attachment of lots is a typical lot layout in many informal areas. On the other hand, the median lot size among informal owners in the occupant survey was 88 sq.m. in Greater Cairo, with 50 percent in the range 62 to 130 sq.m.

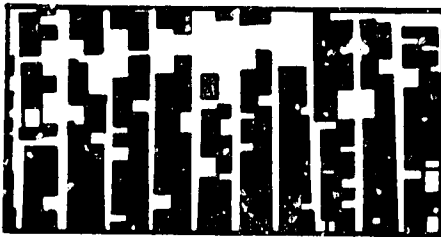
In other sections of Ezbat Osman lots are either grouped into square blocks, or one large lot comprises a block. The product of these lot groupings is a grid pattern which is not atypical of recently developed

Figure 4-3

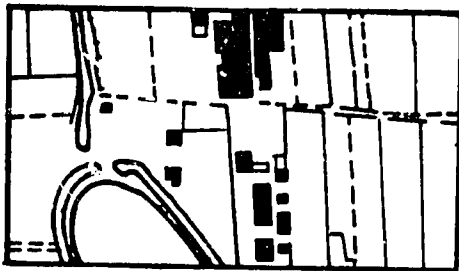
Siting Configurations



Irregular Pattern. Represented in traditional sections of the study areas which were built up areas before 1950. Informal dwellings are constructed in a fill-in manner on vacant lots adjacent to existing residential, commercial or industrial structures. Street widths vary from 2-3 m. to 10 m.



Linear Pattern. Represented in recently-developed sections which became built-up areas during the late 1960s and 1970s. Informal dwellings are constructed in a regular pattern as a result of residents' efforts to provide unobstructed rights-of-way and layouts that do not diverge completely from zoning guidelines. Street widths vary from 2-20 m.

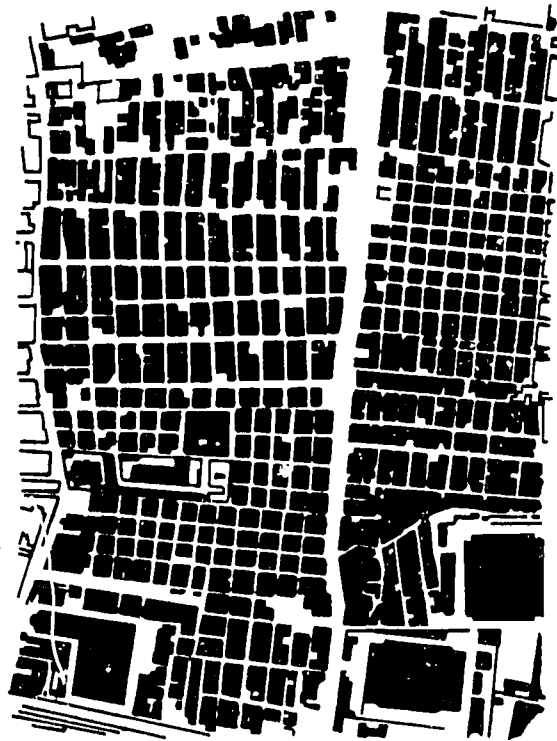


Fragmentary Pattern. Represented in agricultural sections within and outside the cordon and on the urban periphery where subdivision and conversion to residential use is being undertaken. Spacing between buildings distinguishes this pattern from the irregular pattern in which dwellings are attached to form blocks. As these areas develop into residential neighborhoods they usually assume a linear pattern.

SCALE 1 : 5000

Figure 4-4

Section of Ezbat Osman, Central Shubra al-Kheima



SCALE



(1:20,000)

The wider E/W and N/S roads are unpaved tracks which were originally established as transport routes between agricultural fields. The larger buildings are public facilities and factories.

sections of many world cities. This is the result of the subdivider's lot definition and the homebuilders' maximization of lot coverage.

The individual lot owner usually allows 2m. of the front of his lot for street space because the subdivider does not always do so and, if land is allocated by the subdivider for this purpose it is a minimal 1 to 2m. There is little or no public space other than streets and space resulting from building front recessions. Residents will sometimes collectively decide to setback further than 2m. each (providing a 4m. street), if the majority of them want to have a street with ground-floor shops and one wide enough to accommodate vehicular traffic. This is the exception rather than the rule, however, because most people who want a higher value attached to commercial property will simply try to purchase fronting on an existing wide street.

Thus, in the early stages of communities, rights-of-way are privately owned. Later on, the government takes them over and maintains them as public roads, although they rarely meet the 10m. minimum standard.

#### 4.6 Building Permits

As indicated above, it is common for owners to build without permits. This appears to be the result of the costs of complying with procedures required for a permit and of obtaining the permit itself, lack of knowledge of building codes, and the general lack of enforcement.

Obtaining a building permit requires that an owner present architectural drawings of a proposed structure (often costing in excess of LE 350 from an architect or engineer) to local officials for approval. This cost is in itself a deterrent to many informal builders. Moreover, it appears that often adequate designs for informal structures can be produced by either owners themselves or building contractors (31 percent of informal owners surveyed in the Cairo occupant survey designed their own structure; 47 percent of informal owners' units were designed by building contractors; 11 percent of informal owners' units were designed by architects or engineers).

While obtaining a building permit entitles recipients to obtain subsidized building materials, it is widely perceived that for small-scale and informal jobs the resultant cost savings relative to black

market prices do not offset the costs of complying with permit requirements. In some cases, owners do not obtain building permits because of delays in permit approval or receiving building materials.<sup>1</sup>

In other cases, ignorance of building codes and permit requirements reduces compliance. For example, a Dar as-Salaam plasterer, in common with many other supply participants, said he knew nothing of the regulations. A Mit Oqba masonry contractor said, "I do not know anything of legal matters or building codes and I do not think that any other masons or owners have such knowledge."

Enforcement is generally lax. Those responsible for administering building regulations are simply overwhelmed. The police chief responsible for building code violations in one mainly informal district claims to work from 7 a.m. to 10 p.m. making site inspections and writing reports. Thus far in 1981, there had been about 2,000 reported violations of building codes in his district. For those who do have permits there are frequent violations concerning extra floors and set-backs. The police chief said that "the law is very handicapped in tearing down buildings except when on public land" and that even on government land occupancy entitles the occupier to become the legal owner and to subdivide. Most commonly, when violators are caught, a comparatively modest fine is the punishment.

The burden of the enforcement officials is mirrored in responses to the occupant survey. Of Cairo informal owners that had built (rather than purchase) their structures, only 27 percent had ever been visited by authorities either during or after construction and not one of them cited "being hassled by authorities" as the major problem encountered during construction. Enforcement efforts appear to be made more earnestly in the formal sector, however, where 86 percent of Cairo owners report having been visited by authorities during or after construction--about 9 percent of whom claimed "being hassled by authorities" to be their major construction problem.

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<sup>1</sup>Delays in receiving permits appears to be extremely modest. Most Cairo owners responding to the occupant survey waited only one month after applying before receiving a permit. Waits for building materials were longer--sometimes as long as a year, but more often from 3 to 6 months.

#### 4.7 Cultural and Economic Correlates of Informality

Households that participate in the informal housing sector and those that do not overlap considerably in terms of social and economic characteristics. In Cairo, for example, there are no statistically significant differences between formal and informal households in sex or age of the household head, household structure, or income relative to expenditures. There are some noteworthy differences, however, which shed light on the growth of informal housing areas.

One of the most salient differences between formal and informal households is their geographic origin. Among formal owners in Cairo, for example, 89 percent were born in an urban area and 88 percent had spent most of their lives in an urban area. Among informal owners in Cairo, by contrast, only 53 percent had been born in an urban area and only 70 percent had spent most of their lives in an urban area. In a multivariate analysis of the demographic factors associated with living in informal housing, having had a rural birthplace was estimated to increase the chances of living in informal housing by 41 percentage points (controlling for other demographic variables) in Cairo and by 10 percentage points in Beni Suef.<sup>1</sup> Thus, the informal sector is more heavily comprised of rural to urban migrants than is the formal sector. It is likely that both cultural attitudes toward land and building laws and resultant behavior are influenced by rural origins. Traditional practices concerning land use and construction include little or no notion of "proper" land use or construction techniques by urban standards--as is evidenced by the estimate based on the occupant survey that 100 percent of owner-occupied housing in the agricultural villages surrounding Beni Suef is informal.

This cultural predilection is enhanced by a tendency of many rural to urban migrants to be of lower education levels, and hence perhaps less likely to be aware of subdivision, registration, and building regulations. Educational differences are highlighted by the extremes of the distribution

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<sup>1</sup>Living in informal housing was related to demographic variables using logit analysis. Explanatory variables included age, sex, education, occupation, labor force status, and length of stay of the household head; perceived income relative to expenditures; savings; household size; whether or not a household owns all or only part of its building; and site.

of educational accomplishments among households in formal and informal units. Among formal owners in Cairo, for example, 21 percent are illiterate and 20 percent are university graduates. Among informal owners, 43 percent are illiterate and only 3 percent are university graduates. In response to a question, "How much does the average person know about the rules and regulations of building on vacant land?" Thirty-five percent of formal owners in Cairo answered either "knows a few of them" or "doesn't know anything at all," while 94 percent of informal owners in Cairo gave one of these two answers. Such ignorance of the law is likely to be in part a function of lack of education, although it probably also reflects a sense by households in the informal sector that the content of the laws and regulations themselves is largely irrelevant to their concerns. Thus, changing the attitudes of current informal sector households is likely to be more than a matter of simply educating them to the rules. Rather, it may be appropriate to devise a more realistic set of planning standards concerning land use and building, with which potential informal sector households would see it in their interest to comply voluntarily.

## CHAPTER 5

### Physical and Social Infrastructure

Physical and social infrastructure are not only potential determinants of the growth of informal areas, but also important outcomes relevant to the well-being of residents of those areas. This chapter provides an overview of recent changes in certain types of infrastructure in Cairo and Beni Suef, and looks at aggregate differences in access to infrastructure between formal and informal areas. The chapter then examines in greater detail the processes by which physical and social infrastructure is supplied, focusing particularly on communities examined in case studies and in-depth interviews.

#### 5.1 Recent Patterns of Infrastructure Change in Cairo and Beni Suef

Provision of basic utilities in Greater Cairo has increased rapidly in recent years. Table 5-1, for example, indicates the proportion of buildings connected to public water, public sewer, and electricity systems in enumeration districts covered by the scanning survey in 1976 and 1981. For comparison, census figures for Greater Cairo as a whole for 1970 and 1976 are also presented. The geographical extent of major utility systems in Greater Cairo and Beni Suef is shown by overlays to Figures 5-1 and 5-2.

In sampled enumeration districts, provision of each utility increased significantly between 1976 and 1981, continuing a trend indicated by census data for 1970 and 1976. Increases in the provision of electricity appear to have been most dramatic, with the proportion of buildings connected increasing from 59 percent in 1970 to an estimated 90 percent (for sampled enumeration districts) in 1981. While utility provision for sampled districts may be somewhat higher than area-wide provision (sample averages are higher than each corresponding census average in 1976), it seems clear that rapid increases in utility provision are occurring. This is a major accomplishment in light of the rapid increases in the housing stock described in Chapter 2.



Table 5-1

Recent Changes in Provision of Basic Utilities in Greater Cairo  
(Percentage of Buildings Connected)

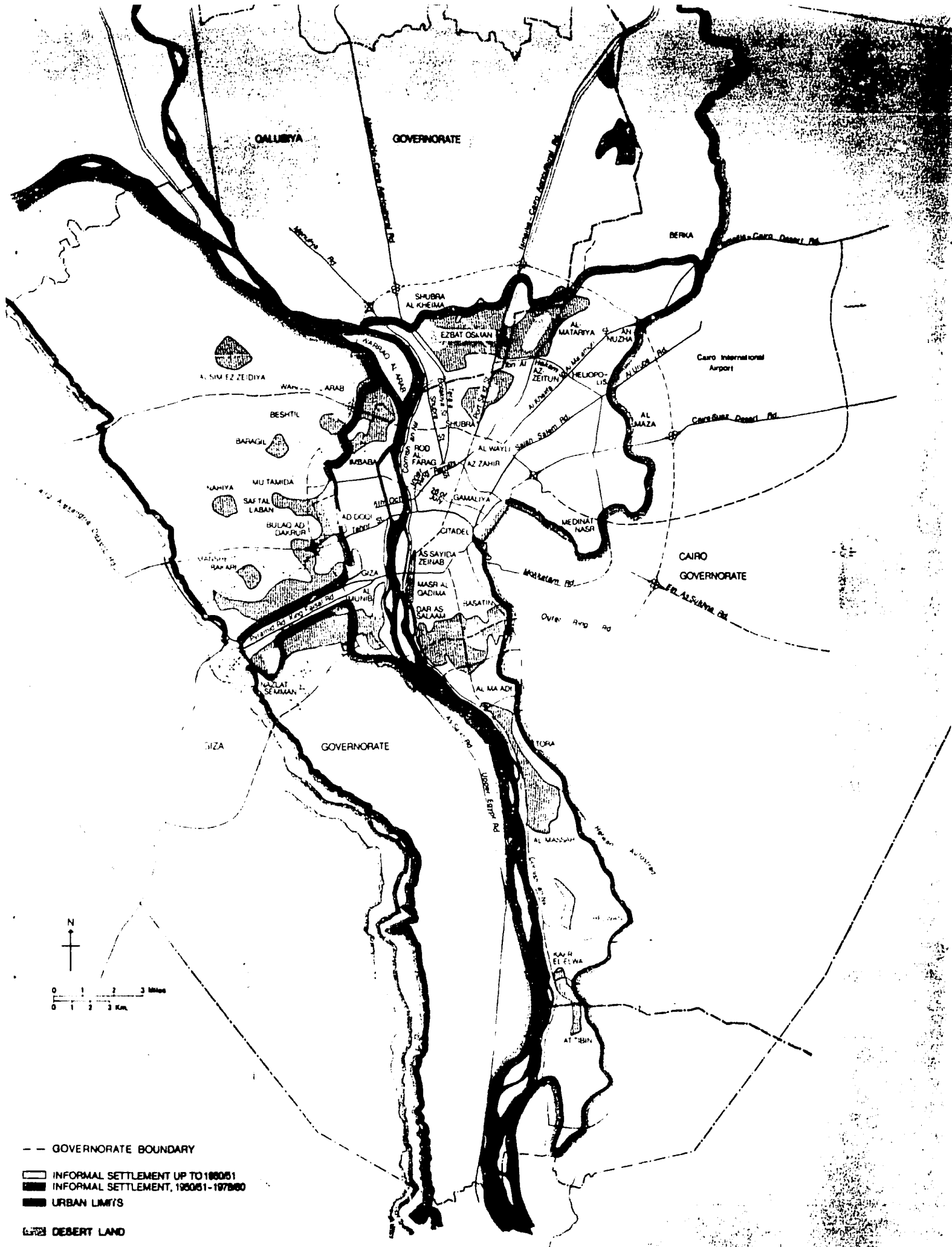
<u>Utility</u>	<u>Greater Cairo</u>		<u>Greater Cairo</u> <u>Scanning Survey Enumeration Districts</u>	
	<u>1970<sup>1</sup></u>	<u>1976<sup>2</sup></u>	<u>1976<sup>3</sup></u>	<u>1981<sup>3</sup></u>
Public Water	50%	56%	57%	65%
Public Sewer	44	52	56	71
Electricity	59	76	82	90

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<sup>1</sup>Source: Joint Housing and Community Upgrading Team, Housing and Community Upgrading for Low Income Egyptians, U.S. Agency for International Development, August 1977.

<sup>2</sup>Source: Arab Republic of Egypt, The National Policy for the Confrontation of the Housing Problem, Appendix I, Report of the Subcommittee for Housing, Social Studies, and Construction Planning, November 1979.

<sup>3</sup>Source: 1981 scanning survey of 50 enumeration districts and corresponding 1976 CAPMAS data.



GALLIYA

GOVERNORATE

BAHARIYA

SHUBRA AL-KHAYMA

Cairo International Airport

AL-SIM EZ ZEIDIYA

Cairo-Suez Desert Rd

BESHTEL

CAIRO GOVERNORATE

BARAGIL

MU TAMIDA

SALTAL LABAN

BULAG AD DAKRUR

MATINAH RAHABI

AL HUNIG

MASLAT SEMMAN

GIZA

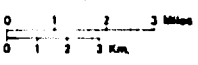
GOVERNORATE

TOBA

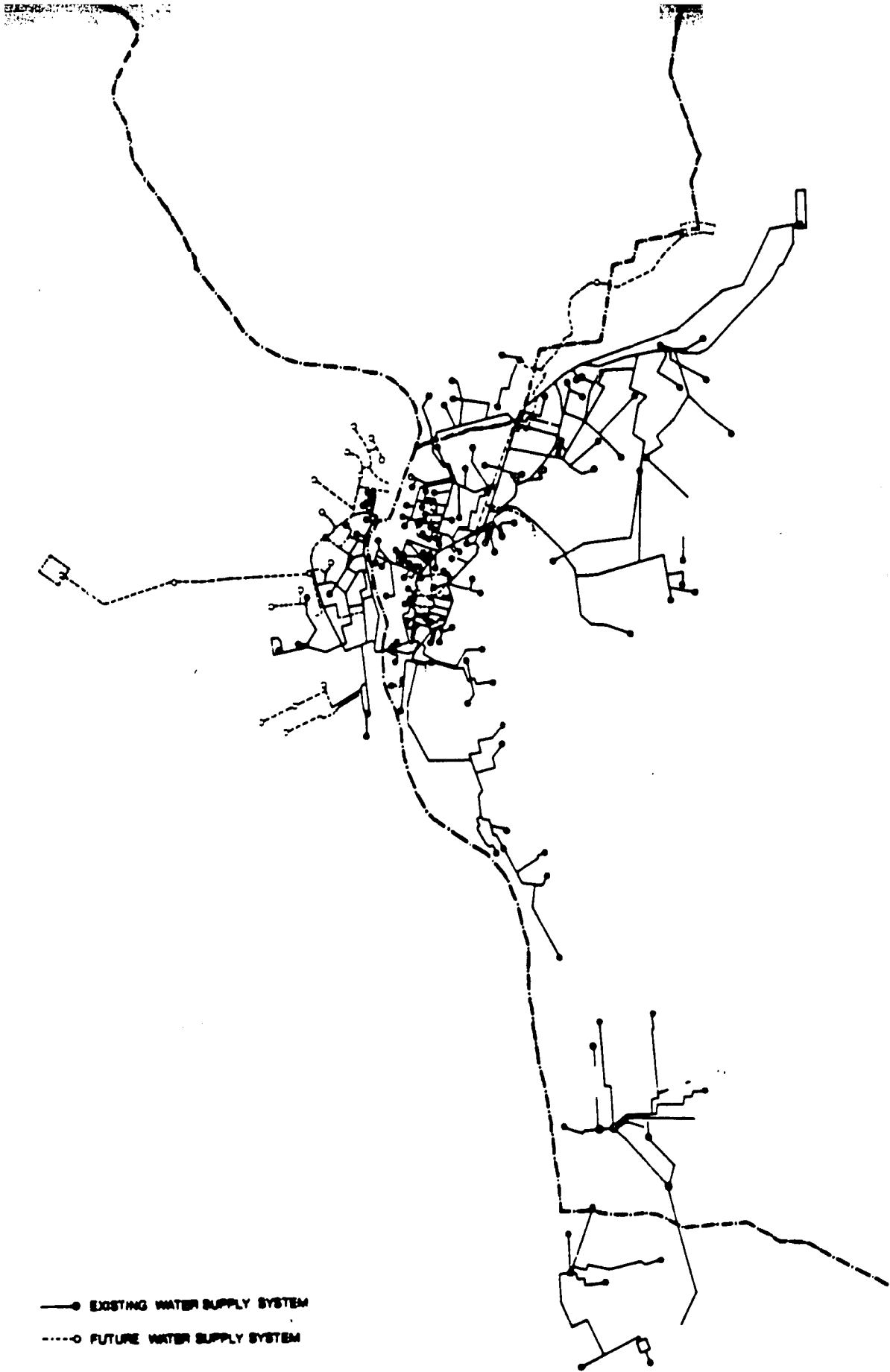
AL MASSARA

KAYH EL ELWA

AT-SHIM



- GOVERNORATE BOUNDARY
- ▭ INFORMAL SETTLEMENT UP TO 1950/51
- ▨ INFORMAL SETTLEMENT, 1950/51-1978/80
- ▩ URBAN LIMITS
- ☐ DESERT LAND
- ▧ AGRICULTURAL LAND
- ▦ NILE
- EXISTING ROAD
- - - PROPOSED ROAD

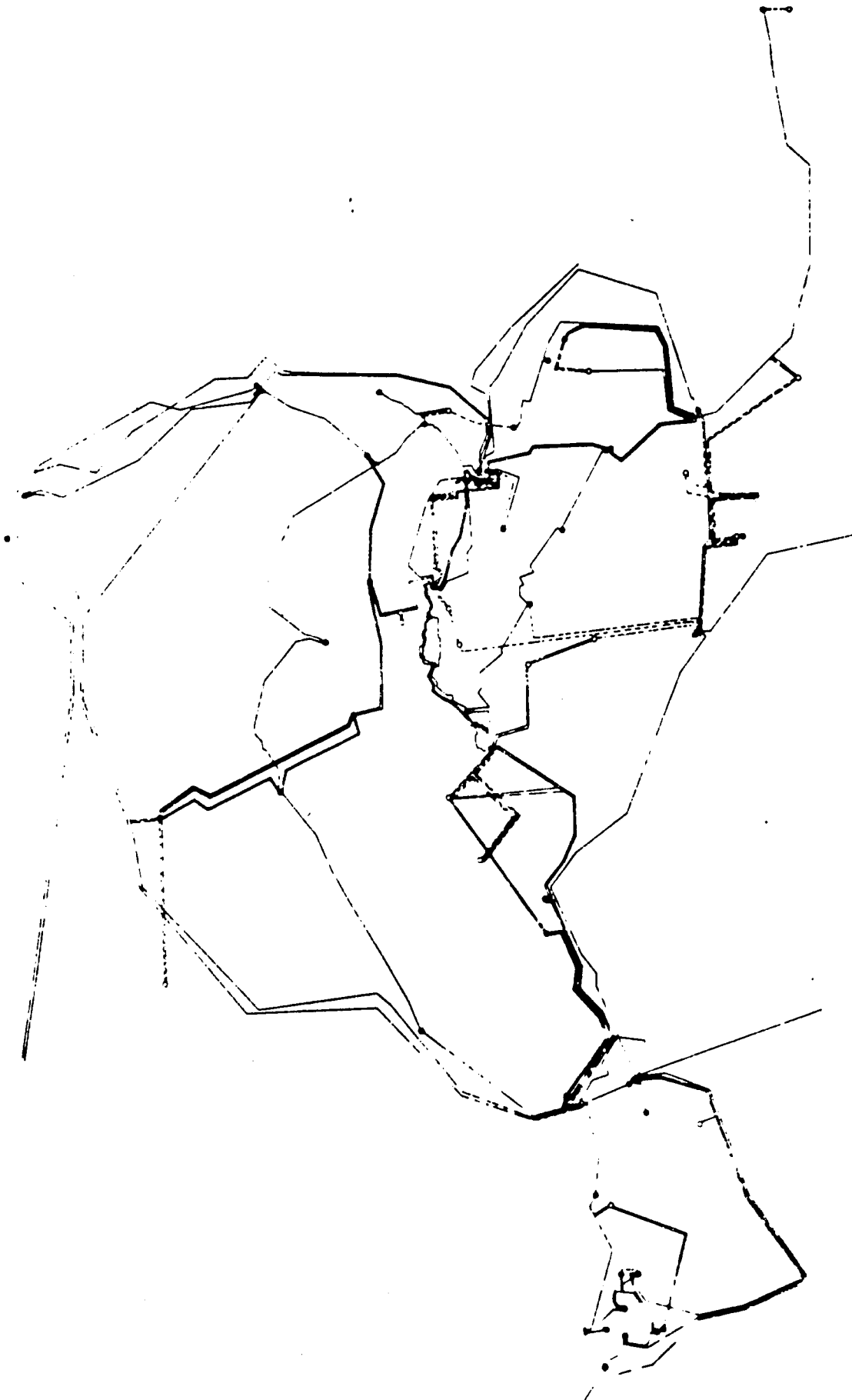


**Best Available Document**



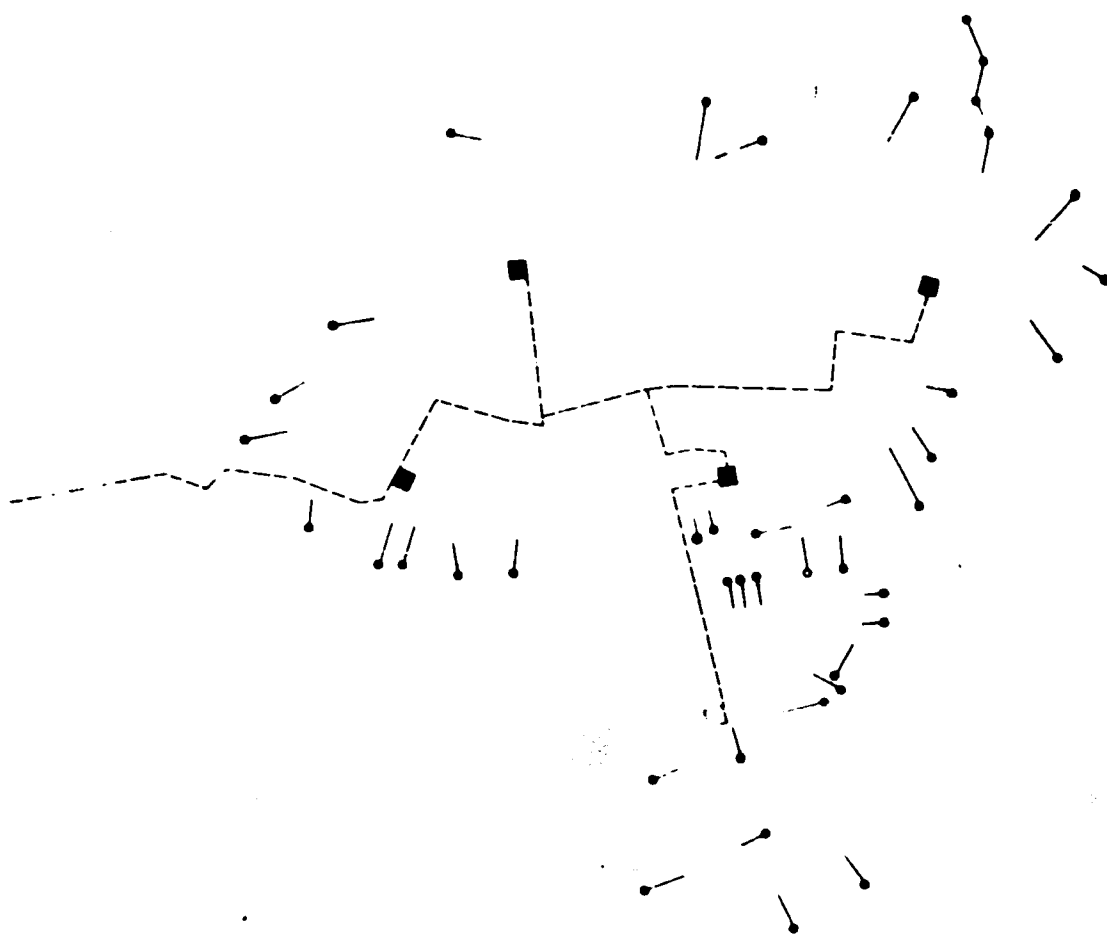
- EXISTING PUMPING STATION
- ◆ EXISTING SEWER SYSTEM LINE

Best Available Document



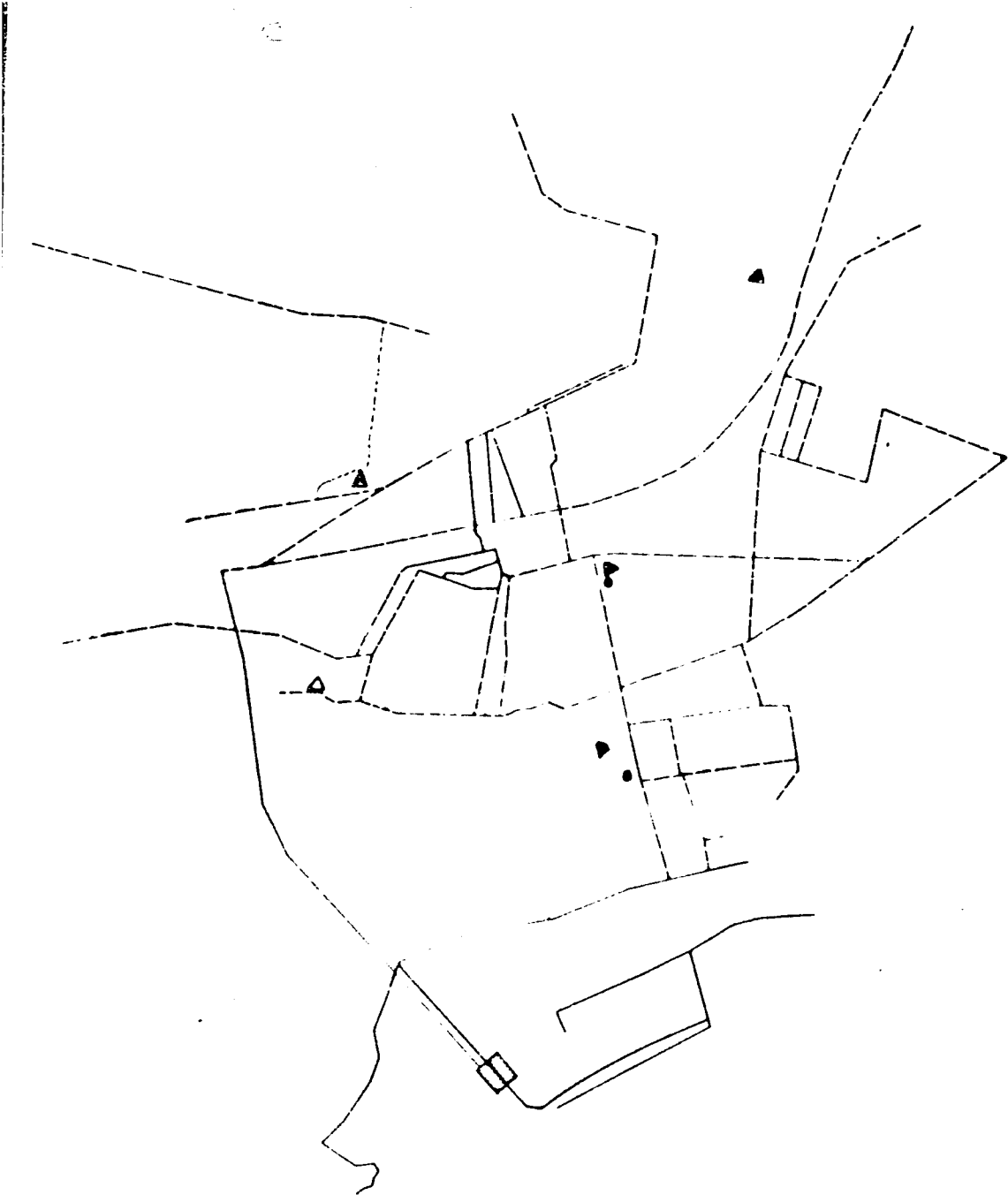
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- FUTURE POWER L

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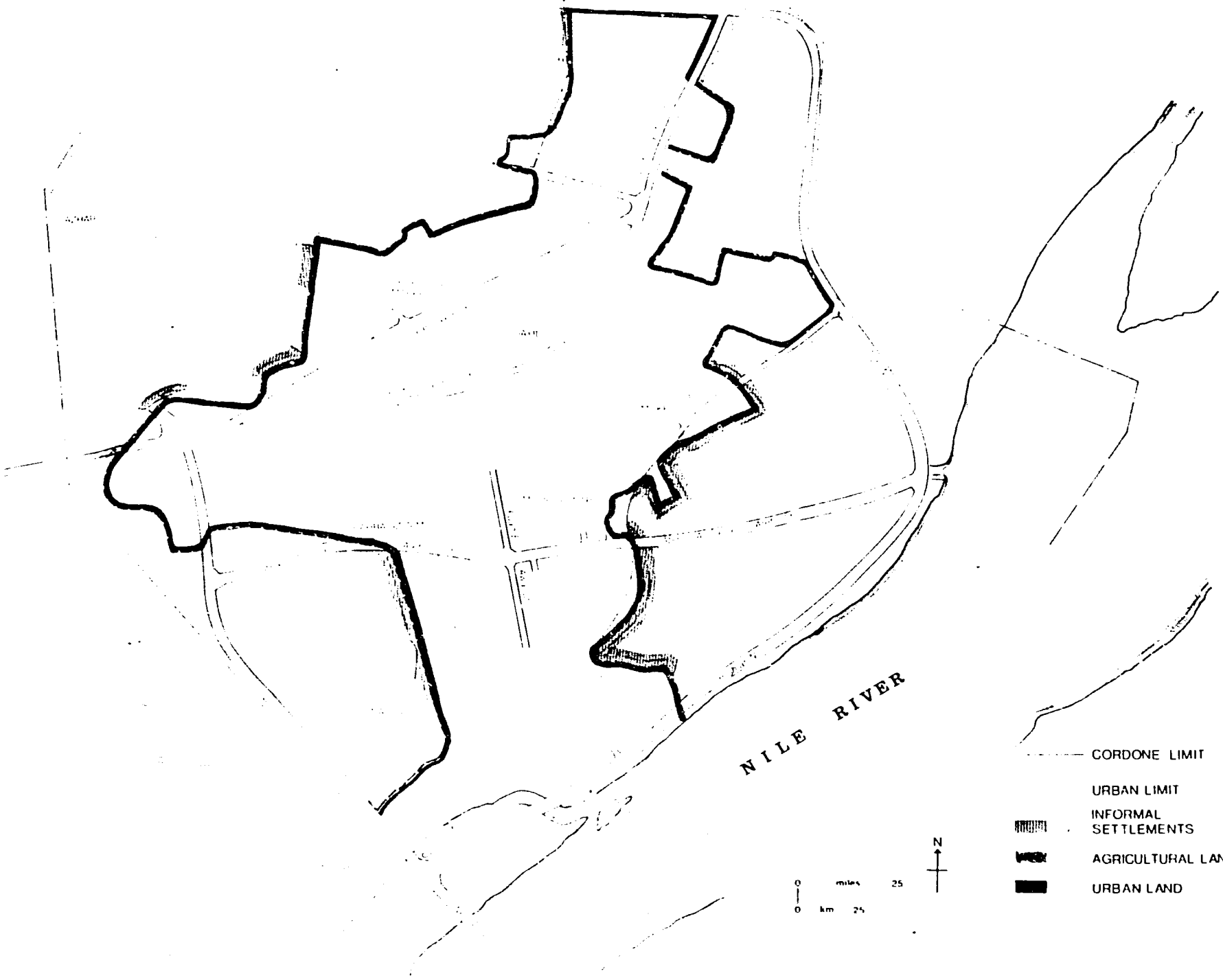


- MAIN SEWER PUMPING STATION
- SECONDARY PUMPING STATION
- MAIN SEWER LINE

Best Available Document



- ▲ PUMPING STATION  
(operating)
- △ PUMPING STATION  
(not operating)
- ▭ NEW PUMPING SITE
- WATER TOWER



NILE RIVER

- CORDONE LIMIT
- URBAN LIMIT
- ▒ INFORMAL SETTLEMENTS
- ▒ AGRICULTURAL LAND
- URBAN LAND

0 miles 25  
0 km 25

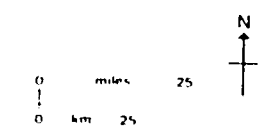






NILE RIVER

- CORDONE LIMIT
- ..... URBAN LIMIT
- ▨ INFORMAL SETTLEMENTS
- AGRICULTURAL LAND
- URBAN LAND



--- MAIN SEWER LINE

--- WATER MAIN

Actual accomplishments may, in fact, be even more significant since provision of utilities to buildings understates connections to individual housing units. This is a result of a strong positive correlation between the likelihood that a building is connected to a utility and the building's size. Figures 5-3 and 5-4, for example, illustrate the estimated relationships between the likelihood that an individual dwelling unit is connected to public water and public sewer systems and the number of units in the building in which it is located. Relationships are indicated for both formal and informal housing.

As the figures indicate, units in larger buildings are far more likely to be connected to utilities than are units in small buildings. Thus, dwelling units in single unit informal structures are estimated to have public water and sewer connections in 58 and 74 percent of cases, respectively, but units in 20-unit informal buildings are estimated to be connected in 98 percent and 96 percent of cases respectively.<sup>1</sup> Relationships for formal housing are similar, although the chances of being connected are estimated to be higher at each building size. Thus, single unit formal buildings are estimated to be connected to public water and sewer in 84 and 76 percent of cases and connection rates are above 90 per-

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<sup>1</sup>These relationships were estimated using multivariate logit analysis. Estimated equations for Cairo were:

$$\text{SPUB} = .9097 + .2544 N - .0963 N*I$$

$$(.0654)** (.0605)$$

$$\text{WPUB} = 1.449 + .2863 N - 1.278 I - .0835 N*I$$

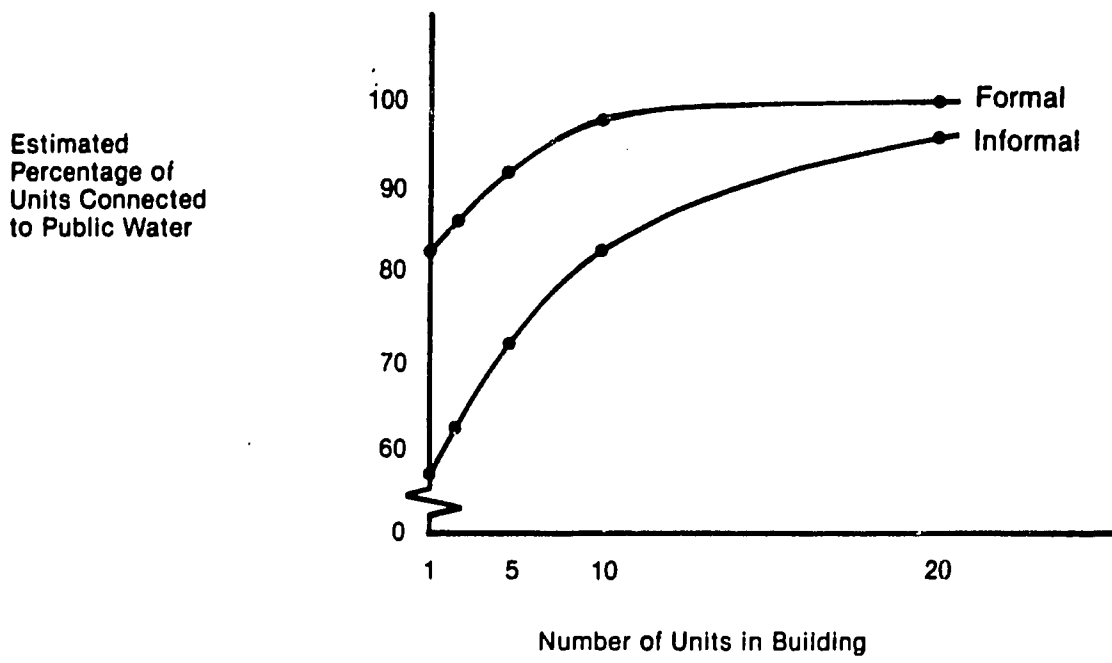
$$(.1072)** (.634)** (.1150)$$

where, SPUB = log likelihood of public sewer connection  
 WPUB = log likelihood of public water connection  
 N = number of dwelling units in building  
 I = informal housing dummy variable (=1 if informal; 0 otherwise)  
 and, \*\* indicates coefficient is significant at the .05 level or above.

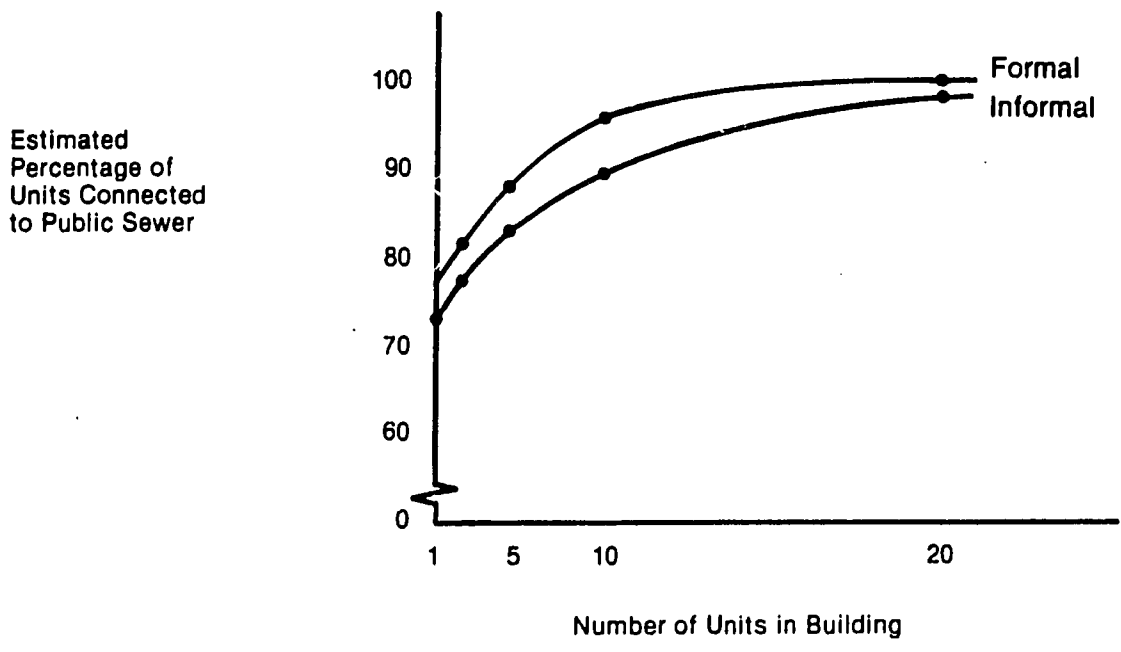
Standard errors are in parentheses.

The log likelihood is defined as  $\ln \left( \frac{p}{1-p} \right)$  where p is the probability of the event in question. If  $\ln \left( \frac{p}{1-p} \right) = a + bX$ , then the probability of the event is  $p = \frac{e^{a + bX}}{1 + e^{a + bX}}$  where e is the base of the natural logarithm. It is a series of such relationships that are plotted in Figures 5-6 and 5-7.

**Figure 5-3**  
**Estimated Relationship Between Building Size and Public Water Connections: Cairo**



**Figure 5-4**  
**Estimated Relationship Between Building Size and Public Sewer Connections: Bani Suef**



Source: Weighted Occupant Survey

cent for buildings with five units or more. It should be noted that differences in utility connections between formal and informal housing are attenuated with increasing building size, with both formal and informal units in 20-unit and above buildings almost universally connected to both public water and sewers.

While the same sorts of relationships between building size and utility provision are noted in Beni Suef, overall levels of service provision are lower and have been changing less rapidly. Table 5-2 indicates proportions of Beni Suef city buildings connected to utilities in 1976 and 1981 for sampled enumeration districts, and of Beni Suef markaz villages' buildings connected in 1981 only.<sup>1</sup> Figure 5-2 indicates the geographical extent of major utility systems in Beni Suef in 1981. The table indicates lower levels of utility provision to Beni Suef city buildings than is the case in Greater Cairo, particularly in the case of public sewer connections. Provision of public sewer and water connections appears to have been stagnant in recent years; only electricity connections have increased significantly from 1976 to 1981 (from 61 percent to 85 percent of buildings connected). Villages surrounding Beni Suef within the markaz are poorly served by basic utilities, with virtually no buildings connected to public water or sewer systems and slightly fewer than half connected to electricity.

Informal units are less well-served by utilities than formal units in Beni Suef. Among one and two unit buildings, which comprise the overwhelming majority of buildings in sampled Beni Suef areas, from 79 to 81 percent of formal units (for one and two unit buildings respectively) are estimated to be served by public sewers, but only 14 to 17 percent of informal units are estimated to be served. In one and two unit buildings, from 22 to 48 percent of formal households (for one and two unit buildings respectively) are estimated to have individual water connections to the public system, while only 16 to 40 percent of informal units are estimated to be connected.

Levels of provision of basic utilities vary not only across cities and among buildings, but also by the time of a building's construction. Figure 5-9, for example, indicates for buildings of various ages

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<sup>1</sup>Data on 1976 village connections to utilities were not available.

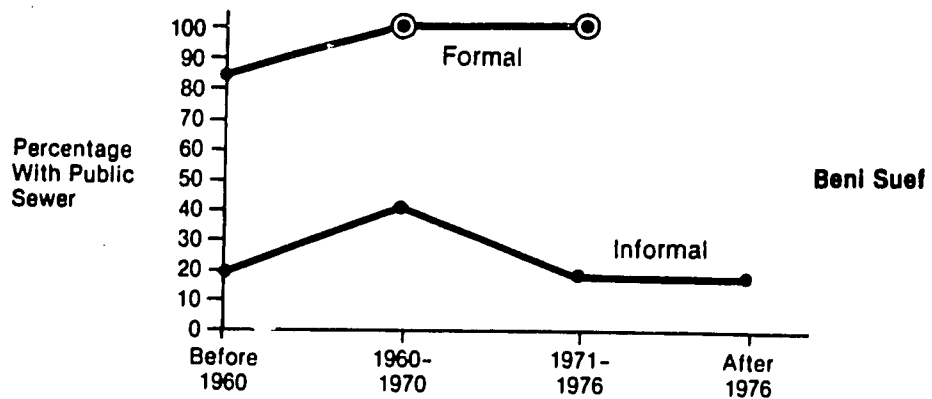
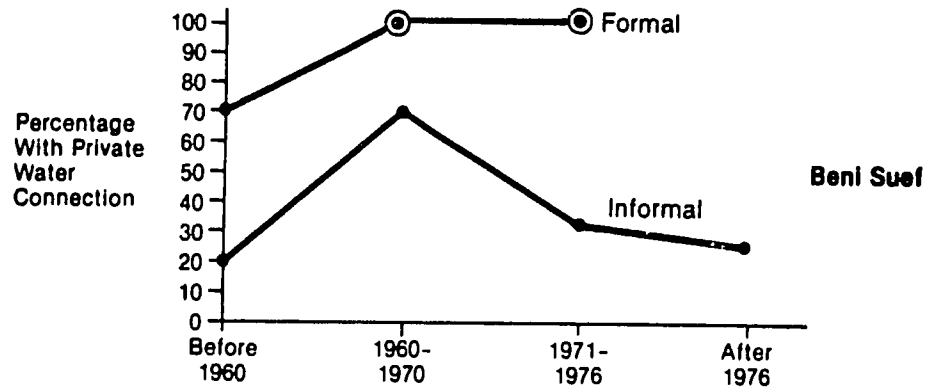
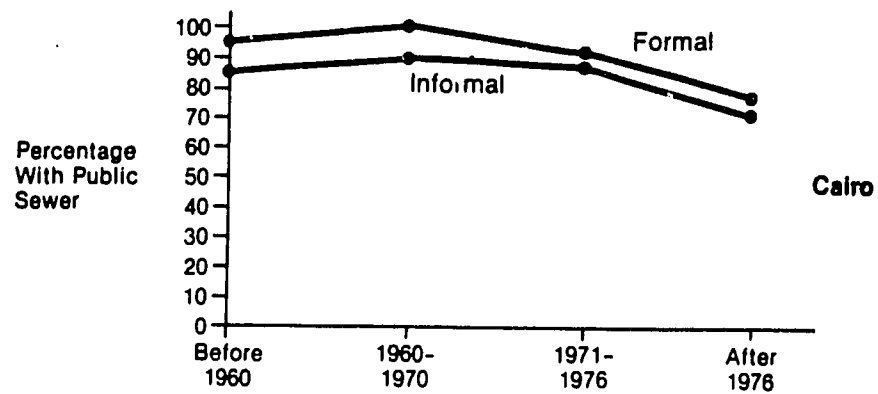
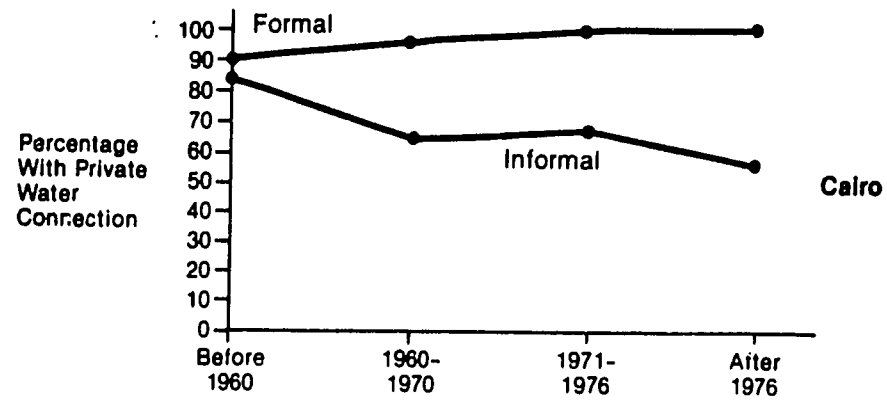
Table 5-2

Recent Changes in Provision of  
Basic Utilities in Beni Suef  
 (Percentage of Buildings Connected)

<u>Utility</u>	<u>Beni Suef City</u>		<u>Beni Suef Markaz Villages</u>
	<u>1976</u>	<u>1981</u>	<u>1981</u>
Public Water	57%	58%	4%
Public Sewer	35	28	0
Electricity	61	85	49

Source: Unpublished 1976 CAPMAS data and 1981 Scanning Survey.

**Figure 5-5**  
**Relationship Between Time of Construction and Infrastructure Connections**



⊙ Fewer Than 5 Observations

Source: Weighted Occupant Survey

the proportions of units in the formal and informal sectors in Cairo and Beni Suef that have private water connections to the public system and public sewer connections.<sup>1</sup>

In Cairo, the incidence of private water connections is considerably lower among recently built informal units than among recently built formal units, 55 percent versus 100 percent respectively for units built between 1971 and 1976. Among units built during earlier time periods, differences in private water connections are less between formal and informal units (e.g., 88 percent versus 81 percent respectively for units in buildings built before 1960) suggesting that over time informal areas tend to catch up with formal areas in levels of public water provision. This tends not to be as true of sewer provision--differences between formal and informal units in public sewer connections show no clear pattern in time. On the other hand, the incidence of sewer provision is similar for informal and formal units of all ages.

In Beni Suef, there is no indication that differences in the provision of basic utilities are attenuated over time. Formal units of all ages are consistently better served than informal units.

It is likely that the comparative differences in levels of formal and informal infrastructure provision and changes over time between Beni Suef and Cairo are a function of both political and economic factors. In Cairo, for example, there appear to be strong political pressures by residents of informal areas to have main lines of infrastructure extended once areas are developed. In Cairo, where most informal housing has been built at high density in areas contiguous to the existing urban fringe or in infill areas between existing developments, it has been comparatively easier for authorities to extend main lines, and in so doing to serve large numbers of households for each linear unit of extension. In Beni Suef city, density is lower than in Cairo, and surrounding agricultural villages are relatively far from main infrastructure lines. Because of

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<sup>1</sup>Similar tables are not presented for electricity connections. In Cairo there is no significant difference in either average electricity connection rates (98.5% formal, 98.1% informal) or over time. In Beni Suef the informal connection rate, 69.3%, is significantly lower than the formal rate, 96.3%, but there is no pattern over time.

the low density and dispersed settlement pattern in Beni Suef, not only might it be more difficult for informal area residents to marshal effective political pressure for infrastructure, but it would be more costly to serve each household than in Cairo.

This overview of recent changes in infrastructure provision is enhanced considerably by an examination of case study and in-depth interview information which is presented in the following sections.

## 5.2 The Process of Providing Physical Infrastructure

The location of most informal housing in illegal subdivisions initially precludes the on-site provision of infrastructure by municipal and governorate authorities. Even in legal subdivisions, the government is only responsible for providing utilities to the border of a subdivision, and the developer required to do the rest. If it is difficult for the government to do its part, it can refuse legal permission for the subdivision.

However, the political realities of the situation dictate that the government may be forced to relax its policies. Once informal housing areas are spatially consolidated and represent permanent residential communities and residents collectively request government recognition, formal provision of infrastructure may be forthcoming.

Residents accept the reality that they may have to wait two years or more after government recognition and sanction of the existence of their communities to receive basic services. People interviewed in the case study areas demonstrate a willingness and determination to provide themselves with basic services and understand that service provision by the government is an expensive long-term process. Consequently, the existence of infrastructure in areas adjacent to potential residential areas is a prime determinant for location.

Informal settlements in the case study areas have been established in vacant areas within communities where infrastructure was already in existence or adjacent to formal areas where the municipal infrastructure network could be accessed or extended. The most rapidly growing areas are neither those with high levels of infrastructure nor those with none. Areas with from 25 to 50 percent of existing buildings connected to utilities grew more rapidly from 1976 to 1981 than did areas with either higher or lower proportions of connections.



The on-site availability of water seems to be the single most important precondition for settlement because it is a necessity both for sustenance and for construction of homes. Availability of water in agricultural areas and immediate access to it by pumps has therefore made settlement on these lands highly desirable. Also, the presence of unpaved tracts traversing agricultural fields and connecting to major and minor roads provides access to and from informal settlements established in these areas.

Electricity and sewerage are less of a concern to residents because power can be obtained by other means (small generators, gas lamps, kerosene lamps, etc.) and the problem of sewerage resolved by installation of septic tanks, cesspits or holding tanks.

While the previous section indicated generally high levels of provision of physical infrastructure, it is clear that there is great variability among areas. Moreover, it is often the case that informal housing in predominantly informal areas is less well served than informal housing in predominantly formal areas. For example, households' levels of infrastructure and access to public transport indicated by the household survey were tabulated according to whether a dwelling was classified as formal or informal and by whether the dwelling was located in an area which was predominately formal or informal. The results are summarized in Tables 5-3 and 5-4. The tables indicate that a dwelling's location in an informal area matters relatively more than its' being classified as informal in determining infrastructure outcomes. For example, informal dwellings located in predominately formal areas (those with more than 50 percent formal dwellings) are generally as well (or better) served by public water and sewer systems, electricity, and public transportation than are formal dwellings in formal neighborhoods. Informal dwellings in informal neighborhoods are less well served by utilities and public transportation than either formal dwellings in informal neighborhoods or informal dwellings in formal neighborhoods; the only exception to this is in the case of electricity in Cairo which is about equally well supplied irrespective of the status (formal/informal) of dwellings or neighborhoods.<sup>1</sup>

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<sup>1</sup>Appendix 8 presents tabulations of a number of infrastructure and other outcomes (including the estimated proportion of informal housing) for each enumeration district. There, it should be noted that many areas have infrastructure levels well below the city-wide averages for informal areas. This is consistent with low levels of infrastructure in some case study areas described in following sections of this chapter.

Table 5-3

Access to Utilities and Public Transportation for Formal and Informal Dwellings  
in Formal and Informal Neighborhoods -- Cairo  
(Percent of Dwellings in Each Category)

<u>Type of infra- infrastructure</u>	<u>Formal dwelling</u>		<u>Informal dwelling</u>	
	<u>Formal Neighborhood*</u>	<u>Informal Neighborhood</u>	<u>Formal Neighborhood*</u>	<u>Informal Neighborhood</u>
<u>Water</u>				
Private connection to pure water	91	87	95	65
No private connection, no public faucet	1	8	0	21
<u>Sewer</u>				
Public sewer	95	87	94	84
Cesspool	4	0	4	11
Neither cesspool nor pit latrine	0	11	0	3
<u>Electricity</u>	98	99	99	97
<u>Transportation</u>				
Within 15 minutes of public trans- portation stop	95	92	98	79
Approximate sample size**	115	80	48	255

\*Neighborhoods estimated to have more than 50 percent formal dwelling units.

\*\*Sample size for "water"; sample sizes may vary slightly for other variables because of missing values.

Source: Weighted occupant survey

Table 5-4

Access to Utilities and Public Transportation for Formal and Informal Dwellings  
in Formal and Informal Neighborhoods -- Beni Suef  
(Percent of Dwellings in Each Category)

<u>Type of infrastructure</u>	<u>Formal dwelling</u>		<u>Informal dwelling</u>	
	<u>Formal Neighborhood*</u>	<u>Informal Neighborhood</u>	<u>Formal Neighborhood*</u>	<u>Informal Neighborhood</u>
<u>Water</u>				
Private connection to pure water	73	***	68	39
No private connection, no public faucet	0		0	27
<u>Sewer</u>				
Public sewer	86	***	73	20
Cesspool	12		14	26
Neither cesspool nor pit latrine	3		7	46
<u>Electricity</u>				
	97	***	100	69
<u>Transportation</u>				
Within 15 minutes of public transportation stop	89	***	100	64
Approximate sample size**	31		13	186

\*Neighborhoods estimated to have more than 50 percent formal dwelling units.

\*\*Sample size for "water"; sample sizes may vary slightly for other variables because of missing values.

\*\*\*Fewer than 5 observations.

Source: Weighted occupant survey

Main line infrastructure is provided by special regional authorities which work closely with the governorates--in the sense that the governor requests that infrastructure be provided in an area, the authority tends to do so. District officials submit plans to the governor, who passes them on to the agencies once approved. Once main lines have been extended to or near informal areas, individual connections become largely the responsibility of informal area residents.

The following section reviews the informal process of individual and collective efforts of residents to provide themselves with basic infrastructure.

### Water

One of the primary reasons why agricultural land is so often preferred for informal settlements is the availability of water. Piped water may not be available for many years in informal settlements, and even then only from inconvenient public fountains. Thus, the ability to obtain water from an on-site or nearby well facilitates construction, and ensures the immediate availability of water for drinking and washing.

### Water Used for Construction

Water for construction is obtained primarily from three sources:

1. Pumped from a nearby canal;
2. From the pump of an establishment; or
3. From a groundwater pump installed by a homebuilder on the construction site.

The latter two sources sometimes serve a dual purpose upon completion of construction of providing potable water for the house construction and/or for communal use in the neighborhood.

### Wash Water

Canal water and groundwater are secondary water sources used for household purposes. Although approximately 2 to 7 percent of women in the Cairo case study areas do wash kitchen utensils and clothing in canals; 50 to 65 percent do so in the bathrooms and hallways of their homes or apartments (E.S. Parsons/ECG-Cairo: 1981, pp. B-33-39). Canals in the Cairo case study areas are contaminated by garbage and chemical waste and consequently the majority of residents prefer alternative sources of water

for washing purposes. Groundwater is a desirable water source for washing utensils, floors, and vegetables, rinsing clothing, while tap water is used for cooking, washing the hair, and washing laundry (Ibid.).

### Potable Water

Approximately 90 percent of all households in sections of the three Cairo case study areas (Shubra al-Kheima, Dar as-Salaam, and Kafr el-Gabal) are reported not connected to water and 67 to 68 percent of households are located in buildings with no water tap (E.S. Parsons/ECG-Cairo: 1981, pp. B-28, C-3 and 9). These figures are indicative of much lower levels of service than is true of the Greater Cairo area as a whole--illustrating the variability of service levels among communities. Although official statistics are not available specifically for informal case study areas in Beni Suef, the situation appears to be similar due to the peripheral routing of water mains on the boundaries of those areas. Overall levels of service in sampled enumeration districts were (as indicated in the previous section) extremely low.

The majority of residents in all study areas depend upon the following sources of potable water:

1. Pump installed by an individual or the community;
2. Containers delivered by vendors;
3. Taps constructed by the government;
4. Tap of a mosque, or extension of a tap from a mosque for public use;
5. Tap of an industrial, commercial, or community establishment;
6. Tap financed and/or constructed by community members;
7. Tap of a neighbor.

Groundwater obtained from pumps has provided an acceptable source of drinking water for many informal areas, including the three case study areas before the installation of public taps in most sections in the mid-1970s. A typical groundwater system costs about LE 150 in the Matariyah/Esbat en-Nakhl region, including a well, electric pump, and holding tank. In the same region, a handpump system without a holding tank costs about LE 35. However, there are problems in some informal settlements with contamination from dust and from sewage intrusion. To avoid this it is necessary to drill to depths of 15 to 20 m in Dar es-Salaam. Originally,

it was only necessary to drill to 5 or 7 m in Kafr el-Gabal, but pollution has forced drilling to depths of 25 to 30 m. This can be expensive: a water pump costs LE 70 for 7 m and Le 300 for 30 m. Even then, residents of the higher density areas are wary of using pumped water, and prefer acquisition from other sources.

Informal settlements are often located near existing water mains. For example, the Cairo case study areas are traversed by mains which were installed to accommodate industrial establishments (Shubra al-Kheima) and/or middle- or upper-income residential developments (Nile Corniche, Ma'adi and Dar as-Salaam). Informal neighborhoods in Beni Suef are situated on the edge of some existing extensions of water mains and pumping stations which are part of the main city core network. Extensions from main lines, or the primary network, to formal residential subdivisions and municipal facilities form a secondary network. It is this secondary network that residents of informal areas will lobby collectively to have formally extended into their neighborhoods. Figure 5-6 presents a schematic diagram of water provision networks.

The informal status of homeowners in the study areas, their location in illegal subdivisions, and the prohibitive cost of water installation prevented most residents from obtaining legal connections into their neighborhoods. Most respondents said that they simply waited until their neighborhoods developed and then went to the authorities requesting drinking water outlets either in the form of public standpipes or public taps in religious facilities. Residents are anxious to establish mosques or churches in their neighborhoods knowing that these institutions are given priority for water installation under existing laws.

Authorities will not deny the public drinking water and attempt to install standpipes where needed, usually at 500 to 1000m. intervals throughout the community. In Beni Suef, for example, public faucets served 7 percent of formal owners and 32 percent of informal owners. Even so, some 34 percent of all Beni Suef households had no potable water source--mainly relying on public pumps outside their buildings.

Most public taps are controlled, e.g., water allocation is supervised by a guard, and if residents pay, they do so on a monthly basis at an average cost from 10 to 25 pt. per family for pump maintenance (E.S. Parsons, pp. 4-6). Individuals and owners of establishments will either allow residents to take water without payment, as a form of charity, or

Figure 5-6

Water Provision Networks

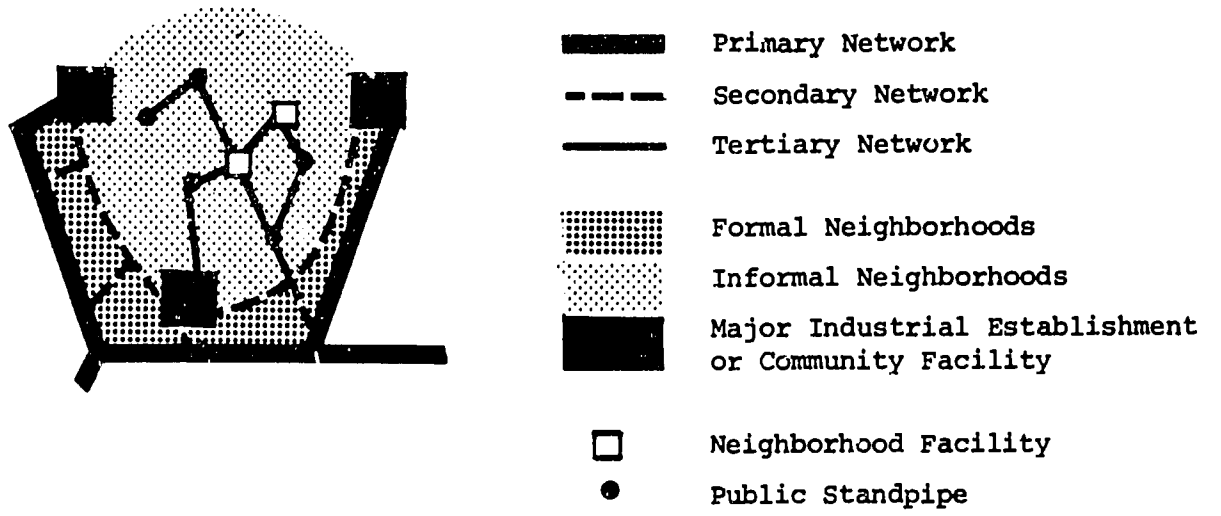
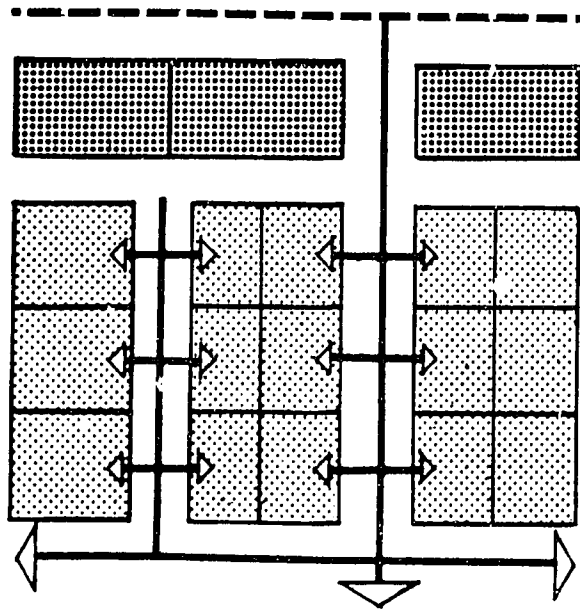


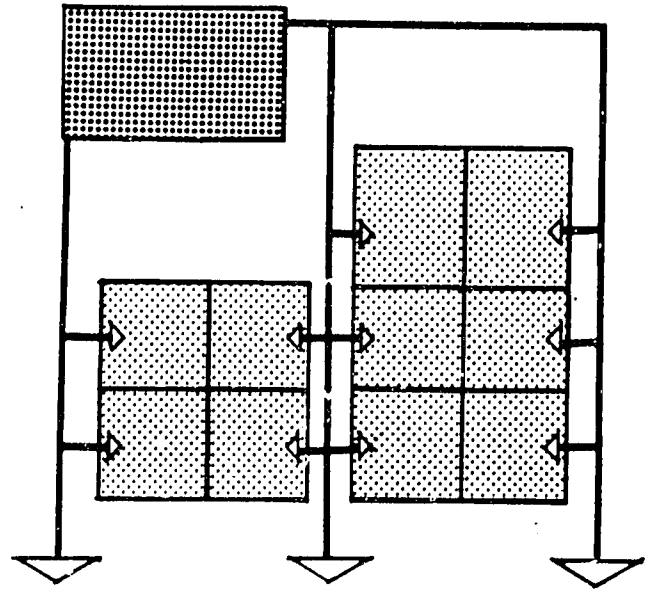
Figure 5-7

Extension of Piped Water to Informal Neighborhoods

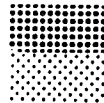
Extension from a Secondary Network



Extension from a Tertiary Network



----- Secondary Network  
———— Tertiary Network



Formal Structure  
Informal Structure



charge a similar amount to that charged at public taps. Of the residents formally surveyed in sections of the Cairo case study areas, 30 to 50 percent obtained water from a public tap and 8 to 15 percent obtained water from a neighbor in another house (E.S. Parsons/ECG-Cairo).

Homeowners who can afford to pay for water delivery will either pay a water vendor per container approximately 10 to 15 pt. or an individual whom they have contracted to carry out the task on a monthly basis for approximately LE 2 to 3. Landlords often arrange this service for their tenants, but the cost is not included in the tenants' rent.

Residents in areas of Dar es Salaam depend almost entirely on water vendors because of the restricted hours on water distribution of public taps (E.S. Parsons/ECG-Cairo: 1981, pp. 4-11). Because income levels are concentrated within the lower and lower-middle brackets, the option of collection or delivery of water is dependent upon family willingness and ability to pay.

The pipes installed by the government to connect standpipes and public taps provide a tertiary network into which many residents tap to extend piped water to side streets and individual houses. Figure 5-7 presents a schematic diagram of means of extension of piped water to informal neighborhoods.

Arrangements to connect to existing secondary networks can be made in two ways. Residents may pay a local contractor to tap into a main line at the cost of LE 70 to 110 (MOHR, 1977, p. 39) or install the connection themselves with the help of a laborer. If homeowners choose to carry out an installation themselves, they can hire a plumber for LE 12 per day and buy pipes for LE 1/m.

Sometimes an agreement is made between formal and informal homeowners to allow house-to-house connections since, more often than not, formal households' lots are connected to water from the time lots are purchased while informal households' lots are not connected.<sup>1</sup> This is not a desirable type of connection in many cases because some formal homeowners do not want to risk being caught by authorities or simply do not wish to participate in such an activity. The easiest and least expensive means to extension is a simple connection to a main line leading to a nearby facility. When connections are made to private formal homes, the owner will meter the cost of

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<sup>1</sup>In Cairo, 69 percent of formal owners responding to the occupant survey indicated that their lots were connected to public water at the time they acquired them. The corresponding figure for informal owners was 17 percent.

water and the recipients will usually divide the cost among themselves. When connections are made to facilities, the supervisor of the facility will manage the cost and recipients will divide it among themselves.

Some residents in Kafr el Gabal pay fees to the mosque for access to water. However, the fees are so high that this is often only justified for high rise buildings (the cost of a 200 m extension from the Kafr el-Gabal mosques is about LE 1,200).

Homeowners on main streets may succeed in getting the government to install a connection to the public water main if the building has been officially designated as formal and if they are willing to wait for their turn after making full payment and receiving an application number. Residents on side streets typically do not have such an option. Generally, within five to six years after their buildings have been completed, they will collectively hire a contractor to hook up the entire street to the pipe on the main street.

Officials are well aware of illegal tapping into water mains but have a very difficult time controlling this activity because contractors will often tap into mains in the middle of the night or on holidays when they know the chances of being caught are minimal.

A major problem in most areas, particularly Dar as Salaam, is that homeowners and contractors do not know (or ignore) that water pressure is low, their tapping decreasing water pressure of the main system even further. Low water pressure and frequent cuts in service are such a problem that building permits now stipulate the installation of water reservoirs on roofs of buildings exceeding four stories. Informal builders do not obtain permits and as a result rarely install reservoirs.

### Transportation

Because of the scarcity of affordable housing and building sites in Cairo and Beni Suef, residents must often live great distances from workplaces and shopping areas. Thus, it is extremely important that settlements have reasonable access to major roads and/or railway lines connecting with other parts of the respective cities. Access within settlements is also important to their attractiveness.

Most informal development has occurred on agricultural land adjacent to a main arterial or secondary feeder road, and in some cases

also a railway line. Residents living close to these main roads and railroads have good access to other parts of the city, and may expect to pay a premium for it when purchasing land. Many others can readily walk to major transport nodes. However, intrasettlement vehicular access is limited by design characteristics of informal settlements and by the poor condition of roads.

The predominance of linear and grid street patterns in the study areas has resulted in a street pattern in which regular inlets are provided into most neighborhoods. Street widths within neighborhoods range from three to six meters and are adequate for the movement of pedestrians and small vehicles. In Shubra al-Kheima and the Beni Suef areas, large unpaved tracts which were originally agricultural transport routes between fields or along canals serve as main roads within communities. Vehicular traffic is accommodated on these roads but their poor condition restricts movements: most roads have never been graded, are obstructed by holes, garbage, standing water, open drainage ditches, or by the top section of holding tanks. Because neighborhoods are unplanned and illegal, subdividers rarely leave any public space, and provision of secondary feeder roads is often difficult unless residents refrain from building on rights-of-way which were in existence before residential development.

Examples from the three case study areas illustrate these problems.

#### Shubra al-Kheima

The central portion of Shubra al-Kheima, where most recent informal development has occurred, is bounded on the west by Cairo/Alexandria road and Cairo/Alexandria railway, and on the north, east and south by agricultural fields. The railway limits access to and egress from the areas to two points where there are controlled crossings. Congestion at these points is extreme most times of the day due to the heavy usage of the Cairo/Alexandria road by large transport trucks and all traffic moving between Cairo and the Delta area. Roads within the area leading to these points are relatively narrow passages running parallel to canals, and traffic is frequently at a standstill because of delays at railroad crossings. The north/south through streets within the area dump traffic onto the east/west road parallel to the Bulagiyah Canal.

Bridges over the canal are:

1. Built by people in the community and cannot accommodate motorized vehicles; or
2. Built by the government to accommodate vehicles making deliveries to industrial establishments.

The largest bridge is located centrally on the Bulagiyah Canal and most traffic in Ezbat Osman, both passenger cars and transport vehicles use this bridge to gain access to the east/west road leading to the Cairo/Alexandria road. Congestion is increased by this intersection and the presence of animal drawn carts.

#### Dar as-Salaam

Dar as-Salaam is bounded on the east by the Cairo/Helwan railway, on the west and south by agricultural fields. The only access road leading to the Nile Corniche and Salah Salaam road is a secondary feeder road on the northern edge of the area. Circulation within the borders of Dar as-Salaam is the worst observed in any of the case study areas. Vehicular movement is almost entirely restricted to the periphery and the condition of roads in those areas is very poor, limiting movement greatly. No adequate north/south route within the area exists and movement is primarily restricted to east/west traversing because of the rectilinear configuration of dwelling attachments.

#### Beni Suef

The physical condition of roads in the Beni Suef case study areas is similar to that in the Cairo areas. Of the six identified informal developments, four have access to a primary street and two are situated within agricultural areas and are accessible only by unpaved tracts. Street patterns within each area are similar to those found in the Cairo areas.

Residents in all case study areas complained about traffic congestion and the time it takes to get out of their areas to other parts of the city. They would like their streets paved but their priorities lie in water and sewerage installations. Most people said they would be satisfied if the government would pave feeder streets so that they could more easily transport commercial goods and could obtain private sector taxi services.

The government has provided mini-bus taxi service but it does not satisfy demand. There is little self-help in road provision because residents cannot afford the cost of the heavy equipment required for grading and materials required for repair. Shopkeepers try to keep street areas in front of their shops unobstructed and wet down the street to minimize dust. Residents sometimes repair a walking bridge over a canal when the need arises. Most residents, as discontent as they are with the roads in their neighborhoods, are willing to wait for municipal provision and improvement of roads.

#### Waste Disposal

The problems of sewage and other waste disposal do not appear to be major factors in the site selection process for informal housing, as does water. Septic or holding tanks can be constructed in most areas and/or waste can be dumped into canals. Furthermore, waste water is kept to a minimum in many settlements because of the limited availability of piped water.

Still, the high infant mortality rates and health risks reported in other studies of these areas are partly attributable to sewerage inadequacies --such as intrusion from cesspools into groundwater used for drinking--and these problems are greater in informal than formal areas.

Figure 5-1 clearly shows the limited extent of the Cairo sewerage network; the system is operating at well above capacity.

Solid waste disposal services are also poor: this was the prime complaint of the Cairo and Beni Suef informal area residents about their districts. This was also identified by households as the service which had deteriorated most. Families also complained of a related problem, flies and insects.

#### Disposal of Sewage

All of the case study areas lack public sewage systems. One main sewer line extends from the eastern edge of the village of Bagame to the central neighborhood of Ezbat Osman in Shubra al-Kheima. Dar as-Salaam is completely unsewered and no drainage connectors or canals are present. Informal neighborhoods adjacent to formal built-up areas on the periphery of the Beni Suef city core have access to secondary sewerage networks but tapping into the network is expensive.

Informal neighborhoods on side streets in the Matariya/Ezbat en-Nakhl area among others are tapping into sewer lines on the main streets. These residents each contribute money to a common fund, then (they claim) go to the municipality to get a permit, get an engineer to prepare plans, and hire a contractor to lay pipes and connect with the one on the main street.

The majority of surveyed households in sections of the Cairo study areas use holding tanks for disposal of toilet waste (E.S. Parsons: 1980, pp. 5-2). Seepage tanks are used but are less effective because of soil conditions, e.g., in Shubra al-Kheima tight soil prevents proper drainage and in some sections within Dar as-Salaam groundwater is only two meters below the surface. Ma'adi officials are particularly concerned about the drainage problem in Dar as-Salaam because it is resulting in deterioration of building foundations.

Drainage of holding tanks is usually undertaken by individuals using animal drawn carts. Tanks are rarely drained frequently enough and excess sewage spills into streets. Drainage carts are often emptied into canals or ditches exacerbating the public health problems in these areas. To avoid overflow of tanks, residents will sometimes dump wastewater into the streets or into a nearby canal or ditch. In houses very close to canals sewage is dumped directly through pipes connected to houses.

Residents in the study areas are very concerned about the poor public health conditions resulting from the lack of sewerage systems and the inadequacies of methods they have to employ. Ezbat Osman residents attempt to improve wastewater drainage by installing very primitive pipe systems on side streets. Residents in this section said they were setting up sewerage lines so that when the sewer is extended down the central north/south street, connections would be easier. In all study areas where canals are present, residents will sometimes dig an open drainage ditch to absorb standing water and channel it into the nearest canal.

Most residents of case study areas interviewed were quite willing to pay for sewer connections but were not very optimistic that the city system would ever be extended to their vicinity. Their disposition toward self-help in provision of sewerage is very strong and residents intimated that they would be willing to install their own neighborhood networks if a main connector were extended to their communities.

## Disposal of Solid Waste

Garbage is dumped into vacant areas of wider streets, trenches and canals. Residents say that they intermittently arrange pick-ups in individual streets or in the immediate areas around their homes but that the volume of waste is so large their efforts seem futile. When these efforts are undertaken the garbage is usually dumped in piles in the nearest open public space where it is scattered by the wind, or ground into the street by cars or people walking over it. In some areas, residents will pay to have garbage hauled to the neighborhood periphery and dumped into canals or trenches, or burned. When these efforts at removal are not mobilized by community members the degradation of the residential environment is extreme.

Many canals in Shubra al-Kheima are completely blocked and dried up by the massive quantity of garbage which has been discarded. Residents say that the government used to attempt clearing them but have not done so for at least one year. These canals are the source of wash water for many of the poorest residents of the area.

Some of the wider streets on the western periphery of Dar as-Salaam are virtually impassable because of the combination of standing water and non-biodegradable garbage. Narrow side streets in many sections of all study areas are relatively less obstructed than wider ones because they commonly serve as play areas for small children and residents make an effort to remove garbage to the ends of streets. Residents in one- and two-story dwellings located on three meter wide streets spend a good portion of the day sitting in their entries or congregating in the street with neighbors. The street in these areas is, in a sense, an extension of the dwelling and its semi-private usage often results in a greater responsibility on the behalf of residents to keep it unobstructed with garbage.

The World Bank is presently assisting in the development of a new solid waste collection facility as part of an upgrading project in Manshe'it Nassar. Although subsidized waste collection undertaken to date by the project has been successful, there are doubts that people will eventually be willing to pay for the full cost of the service as planned. An underlying problem is that Cairo's private sector garbage collectors, the

Zabalin, prefer to go to high income areas to obtain higher value waste materials. Also, waste materials contain large amounts of sand, which puts an additional load on donkey carts. Although the current fee of 15 to 30 piasters per household might be affordable, the long run solution of constructing a solid waste facility might increase the fee beyond the means of local residents (albeit, some of these costs could be covered by selling land currently being used for open housing of garbage or by utilizing general tax revenues).

### Electricity

Under existing laws, all communities, formal or informal, must be given access to electricity. The government must supply principal power lines without charging individuals. Individuals are allowed to obtain a connection to any existing distribution point if their house is within a 250 meter radius of that power source. Installation takes an average of one month after payment of about LE 60. In other areas if ten or more people file a request with the Ministry of Power and are prepared to set aside 8 sq.m. for a distribution point, power will be provided within three to six months. For those on government land such as Basatin, the governor must make a request for special permission. Principal power lines were in existence in all case study areas when informal communities were established.

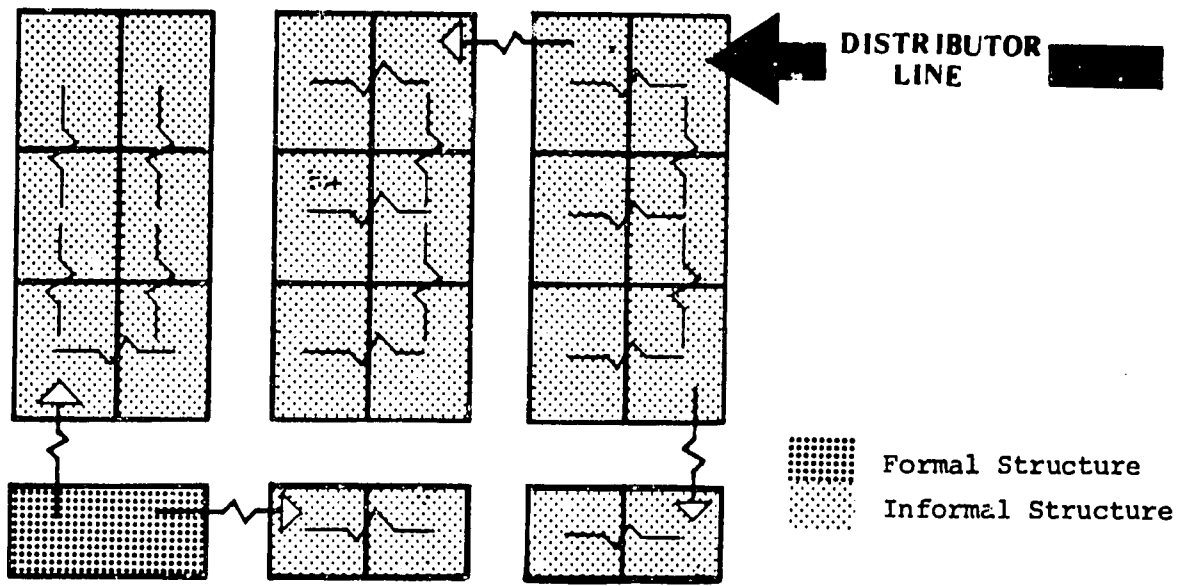
Many of the initial distribution points were built by farm owners or subdividers to service people living on their land. As informal neighborhoods expanded, residents outside of a service area would go to the local power company, request the installation of a distribution shed for their area, and share the cost of installation. Individual homeowners would then hire an electrician or plumber to install a house connection, paying for the wiring by the meter and the cost of electricity according to voltage required. Average cost of hook-up from a house to distribution station is LE 60. This process continues today. Figure 5-8 presents a schematic diagram indicating typical networking of electrical connections in formal and informal areas.

Once initial connections are made to one or two houses on a block, neighbors may extend connections into their unserved houses and share the cost with the owner providing the connection.



Figure 5-8

Typical Networking of Electrical Connections in Informal Areas



Because of illegal connections, old wiring, and so forth, there are frequent power outages in both formal and informal areas (e.g., about three per week in Imbaba).

### Social and Other Services

Tabulations were made from the household survey in Cairo and Beni Suef to estimate household access to services depending on whether or not the dwelling was formal or informal and whether or not the neighborhood was predominately formal or informal. Results of these tabulations are presented in Tables 5-5 and 5-6.

Patterns of access to services among different groups are similar to patterns of access to utilities and transport. Informal dwellings located in predominately formal neighborhoods are often as well or better served by neighborhood services than are formal dwellings located in formal neighborhoods. Dwellings located in informal neighborhoods are, however, nearly always less well served by neighborhood services than dwellings in formal neighborhoods.

Informal settlements which have grown up around existing villages, as in Giza and Qalyubiya, have access to the full range of services: shops, mosques, youth clubs, schools, and sometimes health units.

In other informal settlements, communities have to provide these facilities on a self-help basis or campaign for them, first at the local council then at the governorate level. Dar es-Salaam has provided itself with shops, mosques, private schools, and other services; the government has also built schools. The Governorate of Cairo tends to locate schools around the edge of the informal areas.

In these and other areas, the gradual evolution of their housing developments into communities creates common goals. Older residents in Shubra al-Ballad are pleased that their area has expanded and said that it is no longer an agricultural village but "...just as good as the rest of the city." The older residents will often participate in mobilization efforts to lobby for and help to manage the installation of a facility. Many of these people are small-scale businessmen who are willing to donate their management skills and will often supply discounted materials for construction of facilities to supplement subsidized ones provided by the government.

### Mosques and Churches

Mosques and churches, the traditional nuclei for organized activities, are the social facilities which receive the most extensive self-help efforts in most areas.<sup>1</sup> Their establishment in an informal area is often the first sign of permanence to residents.

Mosques and churches are installed in a community either by the government and/or community associations or groups. Land is donated by an individual or expropriated by the government. The government will provide subsidized materials. With community donations and labor, a mosque can be constructed within a month or two.

Residents in Shubra al-Ballad said that a recently constructed mosque cost LE 10,000. They managed construction, hired laborers to undertake construction, and a contractor to install the roof. They had extended rooms on each side of the mosque to serve as a place for temporary housing for needy families and for a reception room for neighborhood gatherings.

In Shubra al-Kheima mosques are frequently built on canal banks because of the shortage of land within densely-built residential areas. Respondents said this pattern emerged because the land belongs to the Ministry of Agriculture and since agriculture has been discontinued the land could be used for building mosques.

The mosque or church usually serves as a facility for activities involving community assistance. No facilities were observed that were established solely for welfare purposes.

### Public Health Facilities

Residents rely on existing clinics or hospitals in adjacent areas for health care. Clinics in industrial establishments are used by residents in Shubra al-Kheima. Private physicians have opened offices in apartment buildings, but no facility per se has been established by the community to house medical personnel. Some landlords say that they will sometimes offer reduced rent to a doctor who wants to establish an office in their neighborhood. Residents do not seem as concerned about establishing new health facilities as they are over the lack of ambulance service from

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<sup>1</sup>Note that access to mosques and churches (Tables 5-5 and 5-6) is very similar in both formal and informal neighborhoods.

Table 5-5

Access to Services for Formal and Informal Dwellings  
in Formal and Informal Neighborhoods -- Cairo  
(Percent of Dwellings in Each Category)

<u>Dwelling less than 15</u> <u>minutes away from:</u>	Formal dwelling		Informal dwelling	
	<u>Formal</u> <u>Neighborhood*</u>	<u>Informal</u> <u>Neighborhood</u>	<u>Formal</u> <u>Neighborhood*</u>	<u>Informal</u> <u>Neighborhood</u>
Bakery/bread seller	94	88	97	91
Vegetable grocer	92	81	96	83
Butcher	84	78	86	80
Grocery	95	94	98	96
Hospital	57	53	41	32
Clinic	77	74	73	78
Primary school	85	70	97	79
Preparatory school	74	60	75	57
Secondary school	51	31	59	32
Police station	61	61	74	52
Garden/public park	30	31	31	18
Mosque/church	97	96	100	95
Telephone	72	48	81	54
Approximate sample size**	115	80	48	255

\*Neighborhoods estimated to have more than 50 percent formal dwelling units.

\*\*Sample size for "water" (see Table 5-3); sample size may vary slightly for other variables because of missing values.

Source: Weighted occupant survey

Table 5-6

Access to Services for Formal and Informal Dwellings  
in Formal and Informal Neighborhoods -- Beni Suef  
(Percent of Dwellings in Each Category)

<u>Dwelling less than 15</u> <u>minutes away from:</u>	<u>Formal dwelling</u>		<u>Informal dwelling</u>	
	<u>Formal</u> <u>Neighborhood*</u>	<u>Informal</u> <u>Neighborhood</u>	<u>Formal</u> <u>Neighborhood*</u>	<u>Informal</u> <u>Neighborhood</u>
Bakery/bread seller	100	***	100	59
Vegetable grocer	97	***	79	56
Butcher	100	***	87	60
Grocery	100	***	100	80
Hospital	19	***	22	29
Clinic	56	***	35	41
Primary school	95	***	100	86
Preparatory school	81	***	79	43
Secondary school	24	***	38	22
Police station	58	***	74	39
Garden/public park	22	***	66	19
Mosque/church	100	***	100	94
Telephone	75	***	87	66
Approximate sample size**	31		13	186

\*Neighborhoods estimated to have more than 50 percent formal dwelling units.

\*\*Sample size for "water"; sample size may vary slightly for other variables because of missing values.

\*\*\*Fewer than 5 observations.

Source: Weighted occupant survey

their areas to existing medical centers. They do not believe they can do anything about this until roads are improved to enable ambulances to enter their communities.

#### Education and Recreation Facilities

There were no informally provided schools observed in any of the case study areas but Quran instruction was available in mosques. Provision by the government of all forms of educational facilities to informal areas is lower than that in formal areas. Children attend existing schools within their communities or in adjacent communities. Residents depend on government provision and staffing of schools. Recreation for children is provided by private individuals who will set up play equipment like swings and, in larger areas, merry-go-rounds. Residents pay collectively to keep this temporary recreation facility in their neighborhoods. Children will sometimes organize youth clubs and play soccer or exercise in groups in public open spaces. If registered in a school, children will usually utilize playgrounds and stadiums provided as part of that facility.

#### Commercial Establishments

One of the great advantages of owning a three to five story building is that commercial space can be provided on the ground floor. Residents in the study areas have created a sufficient number of retail establishments to supply fresh and processed foods, household products, satisfying the daily needs of most families. Street vendors supply cooked foods and there are numerous coffee shops situated along the wider streets.

Respondents in Shubra al-Kheima say that it is very typical for a textile employee to work for five years and save money to rent a shop or install one in his own home and begin his own business. It is also common for men working in the Gulf to return home and start shops in these neighborhoods. Several establishments catering to construction needs of the community have been started over the past ten years. There are material suppliers, electricians, plumbers, metal workers in almost all of the study areas who began their businesses in response to the demand created by the informal building boom.

### Communication

Communication facilities are practically non-existent in the study areas. The few post offices have been established by the government. Businessmen complain bitterly of the lack of telephone services. They say it costs them a substantial amount of money to send messengers to check on deliveries and pick-ups of materials.

### Transport

Individuals within the community often supply transport services for moving building materials, furniture, or appliances. Because of the narrowness of many streets, items are often transported by an animal-drawn cart or by people. Shop owners will often send someone to pick up products from the distribution source because delivery would be difficult with the poor condition of roads and traffic congestion within communities. The government sometimes has arranged a mini-bus (Shubra al-Kheima) taxi to carry residents from their neighborhoods to the periphery where connections to other taxis or public transportation can be made. Private taxis rarely service these areas because of congestion.

### Security

Some areas are poorly supplied with security services. The fraction of the population living within 15 minutes of a police station is comparatively low--52 percent of Cairo households in informal housing in informal areas and only 39 percent for the corresponding group in Beni Suef. Complaints were sometimes expressed to interviewers of high crime levels and few policemen in some informal areas.

## CHAPTER 6

### Land and Building Acquisition and the Building Process

This chapter examines the ways in which households seek out and acquire land or buildings, acquire building materials and labor, and undertake construction. Principal actors in the construction process, their methods of operation, and major cost elements are identified.

#### 6.1 Land and Building Acquisition

##### Cairo

Households in the formal and informal sectors who choose to become owners tend to do so in somewhat different ways. More than half (57 percent) of formal owners, for example, purchase or otherwise acquire (e.g., through inheritance) existing dwellings rather than build on vacant land. Two thirds of those acquiring existing units claim not to have made major changes or additions subsequently. Informal owners, in contrast, tend to build on vacant land; 67 percent do so; of the remaining 33 percent who acquire existing dwellings, 57 percent of them claim to have subsequently made major additions or changes, the minority leaving units largely as they acquired them. Informal households, by choosing to either build on vacant land or to add incrementally to existing buildings, undoubtedly do so in part to match their temporal pattern of housing with that of their resources. The higher and possibly more stable incomes and greater assets of formal sector households enable them to purchase dwellings much closer to their ultimate aspiration levels than is the case for informal sector participants.

Once having acquired or built a dwelling, tenure patterns are also different in the two sectors. Among formal owners 28 percent claim to own only their dwelling units; 26 percent to own the dwelling unit and "part" of the building"; and 45 percent, the dwelling unit and all of the building. Among informal owners the corresponding proportions are: 21 percent, dwelling unit only; 9 percent, dwelling unit and part of the building; and 70 percent, dwelling unit and all of the building. Thus, partial building ownership, as occurs in the case of some housing cooperatives is far more prevalent among formal owners.



These differences in choices among formal and informal owners are reflected in their expressed reasons for choosing either lots or existing dwellings. Among owners that built on vacant land, for example, nearly three times as many informal as formal owners mentioned the low price of land as the major reason for choosing their land (28 percent versus 11 percent, respectively). By contrast, formal owners who purchased or acquired an existing dwelling were far more likely than informal owners to mention price as the major factor (20 percent versus 4 percent, respectively). Thus, informal households, who are more inclined to build than purchase, are more sensitive to the price of land than any other factor in selecting their land; formal households, who are more inclined to purchase than to build, are more sensitive to the price of existing housing than any other factor in selecting their property.

Next to price in affecting choice of land and existing buildings is inheritance. Among households that acquired an existing dwelling, significant fractions of both formal and informal owners (38 and 32 percent respectively) did so by inheritance. Among owners that built on land, smaller fractions acquired land by inheritance--18 percent of formal owners but only 5 percent of informal owners.

Other reasons for choosing land or buildings tended to be highly idiosyncratic. Modest fractions of owners in both the formal and informal sector who built on vacant land cited proximity to relatives or friends as the major reason for choosing their land (13 percent and 11 percent, respectively). Few formal or informal households cited convenience to infrastructure, services, or transportation as the principal reason for choosing a given piece of property. Expressed lack of concern about such factors may imply that many households feel that it is simply not worth the additional cost to achieve high levels of access to these services when initially choosing land or a dwelling. Thus households' budgetary constraints tend to dominate their property choices at the time most first choose land or a building.

Processes of search for land and buildings tend to be informal. Even among formal owners, few tended to rely on brokers (about 13 percent) or advertisements (about 5 percent) to find out about their property. Even smaller fractions of informal owners relied on these two sources combined. Reliance in both formal and informal sectors is on word of mouth and personal search.

When households find land to build on, more often than not it is identified as a "building lot"--76 percent of the time for formal builders and 59 percent of the time for informal builders. When not identified as a building lot, land is overwhelmingly identified as agricultural land (86 percent of the time for formal builders and 88 percent of the time for informal builders).

Most land and existing buildings that are not inherited tend to be directly purchased from the previous owner rather than either rented then purchased or acquired by squatting. Only 4 percent of formal owners and 6 percent of informal owners claimed to have obtained land by way of "hekr"--squatting with a subsequent possibility of legal ownership. In most cases the previous owner is a private individual. Among builders on vacant land, 61 percent of formal owners and 70 percent of informal owners acquired land from a private individual. Other principal previous owners were the government (4 percent of formal and 6 percent of informal owners), *awqaf* (5 percent of formal and 2 percent of informal owners), and unions, cooperatives, and "other" organizations or individuals (12 percent of formal and 19 percent of informal owners). Among those who acquired existing dwellings, the government was the previous owner in a sizeable fraction of cases (26 percent of formal and 40 percent of informal cases); private individuals were the previous owners for 60 and 40 percent of formal and informal households respectively; and *awqaf* or "other" organizations were previous owners for 10 and 35 percent of formal and informal households respectively.

### Beni Suef

The processes of acquiring land and buildings in Beni Suef are similar in most respects to those in Cairo. An important difference, however, is that the comparatively slower growth in Beni Suef than in Cairo, especially in the villages surrounding Beni Suef city, implies less reliance on new construction on vacant land and more on the acquisition of existing buildings. Thus in both the formal and informal sectors only about one-quarter of all owners built on vacant land; 62 percent and 68 percent respectively of formal and informal owners acquired their dwellings in substantially the same condition as their current condition.

Of households that acquired existing dwellings inheritance played the major role among both formal and informal households--52 percent of the former and 77 percent of the latter acquired dwellings through inheritance. As in Cairo, inheritance of land was important in the formal sector (45 percent of formal owners who subsequently built acquired land in this way) and unimportant in the informal sector (only 4 percent of informal owners who subsequently built inherited land). Aside from inheritance, most land or building transactions in both sectors involved sales by private individuals of "building lots" or property thought by respondents to be in "residential subdivisions." When land was not identified as a "building lot," it was overwhelmingly agricultural land.

As in Cairo, search processes tended to be informal with little reliance on brokers or advertisements. Aside from inheritance, reasons given for choosing a property tended generally to be diffuse. As in Cairo, however, many informal households who built on vacant land emphasized "low price" as the principal reason for choosing a site (21 percent of respondents), and also emphasized proximity to relatives and friends (26 percent of respondents). Also as in Cairo, infrastructure, services, and transportation were hardly ever mentioned by either formal or informal households as principal reasons for choosing land or buildings.

## 6.2 The Building Process

The supply side of the housing market is made up of a combination of individuals providing their own services in designing, building, or supervising construction and firms (including government entities) that provide services and materials for construction. The following sections describe the roles of each and the conditions they confront in undertaking building activities.

### Building Materials

No one involved in building currently appears to have any great difficulty in obtaining materials. Formal sector contractors are able to use subsidized, government-controlled supplies. The informal

sector contractors use materials from private distributors, more expensive in terms of out of pocket costs but much more quickly acquired. Many choose to build units without building permits and, therefore, without cheap supplies because of delays involved in the official process. Access to private open market supplies is almost immediate. Spot shortages in this market sometimes develop but these appear to be short-lived. These private distributors cover the gamut from legal to black market operations. The former include both public and private sector distributors selling materials obtained legally at regulated but non-subsidized prices. The latter include distributors of materials obtained at subsidized prices who sell them at a profit in the open market. These materials may be obtained initially from contractors who inflate their estimates of material needs when applying for building permits.<sup>1</sup> Alternatively, contractors with permits will use non-subsidized materials to minimize delays, and then sell the subsidized materials when they finally arrive at market prices to recoup their original expenditure. One respondent was caught doing this and required to pay a LE 200 fine (J.1).

To quote one contractor: "I get all my supplies from the open market. It is cheaper because some suppliers give good credit terms and sometimes I can save on transportation by bribing drivers." However, many other informal contractors and distributors must pay cash in advance for their supplies.

The prevailing attitude seems to be that it is more economical to build at today's prices and wage rates than to delay and possibly forego the opportunity of providing one's self with a home before inflation makes doing so an impossibility for a lower or lower-middle income family.

The stockpiling of materials is not common. Most builders of low-cost, informal dwellings obtain their materials from small-scale

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<sup>1</sup>Among surveyed formal owners who built, however, none reported having obtained allotments of more building materials than they needed. Given the candor with which households responded to most questions regarding illegal activities, it is tempting to take this finding at face value (or at least as an approximation). This would suggest, as many interviewees alleged or inferred, that principal sources of black market materials were not individual owners but rather large contractors or either domestic primary suppliers or large importers.

distributors (many homebuilders in the case study areas in Cairo sell glass, wood, and metal framing to obtain extra income) or intermediate-level suppliers in the vicinity of the areas where they live.

A reinforced iron bar supplier in Cairo who was interviewed has a permit to receive 40 tons of subsidized iron per month. It costs LE 2 to renew the permit annually. He only makes 5 percent on the controlled prices. He started importing iron 6 years ago and can obtain it at very short notice.

The government can sometimes have an impact on overall supply. One contractor reported that it was much more difficult to obtain cement when the government tightly controlled its supply in 1977-1979.

Supply problems can be measured by the spread between controlled and open market prices. Currently reported prices for key building materials are given in Table 6-1. For example, cement, for which the government price is about half the open market price, appears to be in comparatively shorter supply than does steel, for which open market prices were often reported to be barely above the official prices. While comparisons of the spread between official and black market prices is bound to be somewhat tenuous, it does appear that key materials are in comparatively more abundant supply now than has been the case in the recent past. Table 6-2 indicates estimated official, world, black market, and maximum spot market prices of key materials during 1976-78 as reported by Wheaton (1981). Comparison of Wheaton's figures for cement suggest that the ratio of black market to official prices has been reduced from roughly 2.5 to one in 1976-78 to 2 to one at present; for steel (re-bar), black market to official prices from about 1.3 to one to nearer 1.1 (or less) to one.<sup>1</sup> While these results should be viewed cautiously, there was ample evidence in interviews with materials suppliers that materials availability has improved within the past several years.

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<sup>1</sup>While the range of black market prices given by interviewees extended to LE 400 per ton for re-bars, most estimates were in the LE 325 to LE 350 range; thus the LE 400 price is likely to more nearly approximate Wheaton's "highest spot market price."

Table 6-1

## Materials Used in Informal Housing Construction

<u>MATERIAL</u>	<u>USE</u>	<u>SOURCE</u>	<u>PRICE</u>
* Mud Brick (unfired)	Brick form) walls nonformed )	Local brickmaker, fields canal banks, etc.	LE 15/1,000
** Red Brick (fired)	Whole new ) walls, and used ) foundation	Brick distributor and salvage from bldg. sites	LE 30-65/ 1,000
Cement	Concrete mix for founda- tions, beams and pillars	Government and market	About LE 70/ ton--open  About LE 35 government LE 45 govern- ment/white cement
*** Stone	Foundations, walls	Quarry or building site	Variable
Gypsum & Mastic	Interior and exterior wall coating	Government and market	LE 100/ton-- open market  LE 20/ton-- government
**** Steel re- inforcing rods (re-bars)	Structural reinforce- ment	Government and market	LE 325-400/ ton--open  LE 310-330/ ton--government
Wood	Doors, window frames & shutters (assembled or not assembled)	Market	Variable by size & type
Glass	Windows, doors	Market	LE 2 1/2/m <sup>2</sup>
Eastern toilet		Regular market	LE 14.50
Western toilet		Regular market	LE 15

Table 6-1 (cont'd)

Materials Used in Informal Housing Construction

<u>MATERIAL</u>	<u>USE</u>	<u>SOURCE</u>	<u>PRICE</u>
Water closet for toilets		Regular market	LE 45
Sink		Regular market	LE 9-11
Tiles		Regular market	LE 4.50/44

- 
- \* Used primarily in urban periphery areas and around villages.
  - \*\* Prices much higher for smaller quantities.
  - \*\*\* When used for walls--usually in areas near quarry.
  - \*\*\*\* Variation in price reflects different diameters.

Source: In-depth interviews, 1981.

Table 6-2

Alternative Material Prices 1976-1978<sup>1</sup>

<u>Material</u>	<u>Official Price</u>	<u>World Price</u>	<u>Average Black Market</u>	<u>Highest Spot Market</u>
Cement	18 LE/ton	34	45	90
Steel	150 LE/ton	180	190	220
Wood	120 LE/m <sup>3</sup>	140	180	210
Glass	0.85/m <sup>2</sup>	1.6	2.0	3.0

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<sup>1</sup>Source: William C. Wheaton, "Housing Policies and Urban Markets' in Developing Countries: The Egyptian Experience," Journal of Urban Economics, Vol. 9, 1981, p. 246.



Despite these improvements it is apparent that shortages continue to exist periodically, raising the cost of construction particularly for informal housing. Moreover, to the extent that official prices for key materials continue to be lower than world prices, it is likely that demand for "official" materials is artificially increased--reducing supply and raising prices to the informal sector.

Despite the existence of occasional shortages in key building materials, effects of shortages are sometimes mitigated by varying mixes of construction materials. For example, cement and re-bars are marginal substitutes for each other; when the price of one rises relative to the other, the second tends to be substituted for the first.

There is particular government concern with the use of topsoil to make bricks, yet bricks are readily available and few are made with other materials. Members of the study team visited a small brick works near Beni Suef, beside a canal and surrounded by arable land. These sun-dried mud-bricks were sold for LE 15 per 1,000, and baked bricks for LE 30 per 1000. Trucks and carts came from the town to collect the bricks. Five men and a number of children produced about 2,000 bricks per day. There is resistance from suppliers to using other types of bricks which are being produced legally. For example, an architectural contractor in Ezbat en-Nakhl claimed that gypsum bricks are not durable, and that shale bricks are too heavy to be conveniently handled.

The quality of some of the less important foreign imports is often higher. Glass from Belgium, Switzerland and Britain and paint from China, Germany and Czechoslovakia tend to be of higher quality. Imported re-bars are of better quality: the length is stable, sections are exactly round, the outside surface is smooth, and they are stronger and more malleable. However, Egyptian cement is reported to be superior to imports from China, Japan, India and Spain.

Most of the distributors interviewed who serviced the informal sector operated on a very small scale. A typical cement dealer in Esbat en-Nakhl sold less than 10 tons of cement per month. As with all imported commodities, the price is regulated such that he cannot achieve any price advantage over his competitors. His profit margin is

allegedly 2 percent. He does not stockpile materials because he has neither the space nor the financial capacity. Another small distributor in Bulaq ad-Dakrur obtains cement from owners and contractors who have excess cement obtained at subsidized prices for formal sector construction. His profit margin is obviously unregulated.

A contractor in Mit Oqba indicated that while most distributors of a particular commodity charge roughly the same price, there is considerable variation in quality.

### Labor

Labor for the simpler housing is readily available. It is recruited from cafes and other gathering places, sometimes directly by the contractor, sometimes by his foreman (H.5, J.1). Few contractors have large permanent labor forces; the smaller ones have none at all. A typical small contractor has a core team that he uses on a part-time basis, whenever there is work. However, there were some cases of much larger informal sector operations, including a land developer who claimed to employ 150 construction laborers.

The quality of labor is generally adequate for lower quality housing. Many do complain of a lack of skilled trade labor. One carpenter said he frequently turned down work because he could not get adequately skilled labor. As has been well documented, skilled tradesmen can easily be tempted to go to other Arab countries (J.2).

Some steps are being taken to improve the supply of skilled labor. The headmaster of the Dar as-Salaam Technical School for Building and Construction said that his school was one of the first of its kind in Egypt. It emphasized practical studies, some lasting 3 to 5 months, others many years. He complained of a lack of suitable teachers (D.8). Many students went to other Arab countries when they qualified, returning after a few years to start businesses. He hoped to expand the school to 1,500 students.

Many cases were reported of the same contractors and laborers working in both the formal and informal sector, and charging somewhat lower rates in the latter (G.3). This is particularly true when doing work for friends and relatives, as is often the case in informal sector

work. Within the informal sector, the ranges of rates are given in Table 6-3. Supervisors are often paid by the month--about LE 250. Laborers may also be paid on square meters of output. The rates for Beni Suef are about LE 1 per day less.

According to one contractor "Ninety-nine percent do not have social security." The employee is supposed to pay 8 percent and his employer 15 percent.

### Construction

A dwelling unit or structure is defined as informal when it is constructed without a building permit being obtained and/or when building codes are not followed. An informal structure may be designed and constructed by the individual owner and laborers hired by him, by laborers and a site manager contracted by the owner, or by a contractor who takes responsibility for the entire construction process. The services of a professional may be used, usually in the case of larger buildings requiring structural design, or not used at all, as tends to be the case for buildings under 3 stories. Materials for construction of informal units and structures are obtained from the regular and black markets at competitive prices. Five major types of informal dwellings have been identified in the study areas and are presented in Table 6.4.

### Dwelling Characteristics

Most dwelling units are permanent structures built on land owned by the real property owner. The exceptions are Types A(1) and E.

Most Type A and B dwellings (one or two stories) are owner occupied, used almost exclusively for residential purposes, and were built by the owner and his family or the owner and hired labor. A small number of dwellings are under construction by laborers and a site manager. Construction responsibility is dependent upon the dwelling owner's free time and availability of funds. These housing types are usually built by low to lower middle income groups primarily to meet immediate shelter needs rather than as investment in rental units, although the latter case

Table 6-3

Labor Rates in the Informal Sector (1981)  
(LE/day)

	<u>LE/Day</u>
Reinforced concrete carpenter	3-7
Reinforced concrete blacksmith	2-6
Reinforced concrete laborer	1-6
Plasterer	8
Bricklayer	5-12
Tiler (walls)	15
Tiler (floors)	10
General laborer	3-4
Painter	3-4
Plumber	10-20
Electrician	6-10

Source: In-depth interviews, 1981.

Table 6-4

Types of Informal Housing--Case Study Areas

Type Category	DWELLING TYPE	Temporary	Permanent	OCCUPANCY	OWNER PRESENT & OCCUPYING ONE OR MORE DWELLING UNITS	LAND OWNED BY DWELLING OWNER	DWELLING USE	BUILDER OF DWELLING			INVESTMENT PURPOSE		
								Owner & Family	Owner & Laborers	Contractor	Family Shelter	Residential Property (Rental)	Commercial Property (Rental)
A	(1) 1 story	x		single family	x		Res.	x			x		
	(2) 1 story	x		multi-family	x		Res.	x			x		
	(3) 1 story		x	single family	x	x	Res.	x	x		x		
	(4) 1 story		x	multi-family	x	x	Res.	x	x		x		
B	(5) 2 stories		x	single family	x	x	Res.	x	x		x		
	(6) 2 stories		x	multi-family	x	x	Res.	x	x		x		
C	(7) 3 to 5 stories		x	multi-family	x	x	Res.		x	x	x		
	(8) 3 to 5 stories		x	multi-family		x	Res.		x	x			
	(9) 3 to 5 stories		x	multi-family	x	x	Res. & Commer.		x	x	x	x	x
	(10) 3 to 5 stories		x	multi-family		x	Res. & Commer.		x	x		x	x
D	(11) 5 stories and more		x	multi-storey	x	x	Res.			x	x	x	
	(12) 5 stories and more		x	multi-family		x	Res.			x		x	
	(13) 5 stories and more		x	multi-family	x	x	Res. & Commer.			x	x	x	x
	(14) 5 stories and more		x	multi-family		x	Res. & Commer.			x		x	x
E	OTHER TYPES OF INFORMAL DWELLING UNITS:												
	(15)	single or multiple room additions (permitted by building code) to existing 15.a Formal Residential Building 15.b Formal Residential/Commercial Building 15.c Formal Industrial or Commercial Building											
	(16)	additional floors containing one or more units (not permitted by building code) in formal buildings.											

does exist. Housing designs are basically urban adaptations of rural types and are found in the older sections and peripheral (agricultural) areas, along canals (particularly A(1)), and along narrow side streets.

The Type C dwellings (3 to 5 stories) are owner occupied when used to provide shelter for the nuclear and extended family but not necessarily owner occupied when used as a residential or residential/commercial rental property. The most common usage of this building type is C(9) because many working class people consider a dwelling which provides them with shelter and steady rental income as a sound investment with tangible returns. Of the owners interviewed in Shubra al-Kheima, many were older residents who had accumulated capital through working as industrial laborers and had phased the construction of their homes over a ten to fifteen year period. Many of the residents interviewed in all study areas had accumulated capital through working abroad in the Persian Gulf States and were constructing over a period of months or only a few years. Individuals with enough capital to invest in a rental property will sometimes build a Type C(10) dwelling.

Many of the older Type C dwellings are actually Type A and B dwellings which have been upgraded and vertically extended. Owners often design building components and take part in the phased construction of Type C dwellings. Type C dwellings are located in most sections of the study areas and are not confined to major arterials or wider streets, although there is a higher incidence of C(9) and C(10) type on major thoroughfares or on busy side streets because of the commercial potential of these locations. In older traditional sections, A and B types are being upgraded to C types and in recently developed areas this type is becoming predominant because of the constriction in the land market, rising land prices, and the prospect of higher rental incomes.

Type D dwellings (5 story and higher) include units which are used as residential rental or condominium units; two of the four subtypes include units which are rented or sold for commercial use. They may or may not be owner occupied. Since this dwelling type requires a rather substantial capital investment, it may usually be financed by persons who are primarily entrepreneurs, a group of investors profiting

we from the informal housing market. Construction of this type is undertaken by a contractor employing both skilled and unskilled labor and utilizing professionals to meet more complex engineering requirements. Often undistinguishable from formally constructed buildings, type D structures are situated on main arterials or in areas adjacent to them. They are usually middle- and middle-upper income areas.

Type E dwelling units (room and floor additions) provide shelter for a variety of income groups and their construction is usually contingent upon the permission of the owner of the dwelling or structure to which these additions are made. Sub-types 15(a) and 15(b) may include a penthouse built on the upper floor of a formal building, a shack built on the upper floor of a dilapidated formal or informal building, etc. Sub-type 15(c) may consist of a two-room appendage to a factory or department store which is inhabited by an employee of that establishment. Sub-type 16 may include an addition of one or more floors on the top of a medium-rise apartment building or the inclusion of three additional floors in a newly-constructed formal residential/commercial building.

Type A and B dwellings are the predominant type found in most areas (ES Parsons 1980, p.2-14/CAPMAS, 1976). A substantial number of people said they began to upgrade and vertically extend these types in the early and mid-1970s when demand for apartments increased dramatically. It was the popularity and economic viability of the A and B type dwellings that resulted in extensive horizontal expansion of informal areas in the 1970s. Although the trend of building Type A and B dwellings continues both in Cairo and Beni Suef, rising land costs, the increased and steady demand for rental units will almost certainly lead to a higher proportion of the informal housing stock being comprised of Types C, D and E. Site observations and the scanning and occupant surveys confirm this : a substantial number of A and B dwellings are being vertically extended and upgraded and most new buildings being constructed are intended to be higher than 2 and 3 stories.

Landowners frequently hold the land for some time before they wish or are able to build. Twenty five percent of Cairo owners had held their land for five or more years before developing it; the median

length of time before development in Cairo was about 2 years. In Beni Suef, holding periods before development were shorter--a median of one year with half of all builders on vacant land having held land for from 6 to 36 months before developing it.

The owner of the land usually hires a contractor to construct his property, although all the contractors contacted had built their own homes on their own land and some had been subdividers. Owners often bought the materials but only infrequently provided any labor. For example, among Cairo owners that built on vacant land only 7 and 11 percent respectively of formal and informal owners said that either they or relatives actually carried out construction. Among formal owners, contractors generally carried out the work (76 percent of cases) although sometimes work was done by gangs of workmen supervised by the owner (17 percent of cases). Among informal owners, this latter method was most prevalent (45 percent of cases) with only slightly fewer owners (40 percent) reporting that a contractor actually carried out construction. These figures suggest that there is at present only a limited role for self-help in construction activities.

The services of an architect or an engineer are required to obtain a building permit in the formal sector. Hardly a single contractor or owner employed an architect to design an informally constructed house. In 47 percent of Cairo informal household cases the building contractor did the design; in 31 percent of cases the household head did the design. In Beni Suef, owners themselves and contractors together designed 67 percent of informal houses, the remainder being done by friends and relatives and architects or engineers.

Informal contractors tend to use cheaper labor--a semi-skilled man to do a skilled man's job. There are savings to be made on materials too. As one contractor said: "If prices go up, I decrease the amount of expensive materials. I like turnkey projects. I make more profit using fewer re-bars, less cement, and poorer bricks." Another gave more detail: "I use fewer than the required 4 iron bars per square meter of cross section; put in stirrups every 40 cm. instead of every 25 cm." One claimed he could cheat an owner even if the owner bought the materials.



The luxurious buildings were alleged to have a lower labor proportion (10 percent) than popular units (15 percent) with a significantly larger portion of better housing cost being devoted to interior finishing (cabinetry, wall and floor finishing materials, plumbing, and electrical fittings). Total costs are about the same in Cairo and Beni Suef. Labor is slightly cheaper in Beni Suef, but materials slightly more expensive.

One Cairo-wide general contractor costed out a popular dwelling unit of 50 sq.m.:

	<u>LE</u>
8,000 bricks (4 truckloads)	320
Bricklaying	80
Cement	86
9m <sup>3</sup> concrete	500
Carpentry of doors, windows	300
Painting and plastering	250
Plumbing	200
Floors and tiles	200
Electrical fittings	<u>50</u>
Total	1,986

These cost figures may be compared to those of public and cooperative housing. The least expensive public sector units currently under construction in Cairo are at Birket at LE 3,000 to LE 4,500 (these costs are exclusive of land costs since Governorate land, which is assumed to be free, is being used). Cooperative housing tends to range from LE 5,000 to LE 10,000, attracting government subsidies for interest on loans for the 100 sq.m. units at the lower end of that range.

#### Finance

Formal financial institutions in Egypt have a limited reach. Despite overall economic growth, as measured by real household incomes, household savings, asset formation and activities of the general banking system--all of which register increases, the level of formal, home mortgage funds has remained stagnant. In 1977 and 1979, the primary source of funds for home mortgage lending institutions in Egypt continued to be Central Bank allocations (Pratt Associates 1979, PADCO 1981). In other words, the housing finance institutions were unable to mobilize household savings.

Respondents differed as to the relative quality of formal and informal housing. Formal sector participants believed informal housing to be at a far lower standard because of the lack of architect/engineering professional input and use of untrained labor. However, the lack of formal sector housing at comparable construction costs makes such comparisons almost meaningless, and in fact, team members observed very poor quality formal sector buildings. One general contractor, a former teacher in a technical school, said "Informal buildings are overdesigned by 50 percent in every aspect--if there is no engineer on the job." A Mit Oqba contractor asserted: "More formal buildings collapse than informal."

A Dar as-Salaam contractor advised that in terms of quality there is no useful distinction between informal and formal buildings: "The only meaningful distinction is between 'popular' and 'luxurious' housing."

The rate at which buildings are constructed depends upon the availability of the owner's funds. Interviewees frequently heard of a construction rate of 1 to 2 months per floor for popular housing. One 5 story building had been erected in 6 months although another in the same area took 18 months. The availability of materials and labor per se appeared to have only a modest impact on the rate of construction.

Perceptions of problems encountered during construction differed predictably between formal and informal owners. Among the former, the major problems were "shortage of building materials" (24 percent), "shortage of skilled labor" (10 percent), and "being hassled by authorities" (8 percent). Among the latter, major problems were "shortage of building materials" (42 percent), "shortage of money" (17 percent), and "getting water to the site" (11 percent).

Overall building costs were generally discussed by interviewees in terms of three categories, costs for which were estimated to range as follows:

	<u>LE/sq.m.</u>
Popular	30-50
Average	60-70
Luxurious	80-100

Many obtain seed capital by selling inherited land or by spending a period of time in other Arab countries earning up to 10 times their Egyptian salaries. One owner managed to save LE 10,000 in 5 years in Saudi Arabia. Almost half the contractors and subcontractors began in the same way with less spectacular savings.

Sometimes the landowner supplies credit to purchasers. Bulaq ad-Dakrur and Ezbat en-Nakhl respondents reported land sold on the basis of a 30 to 50 percent down payment with 2 to 4 years to repay the loan, and 12 percent interest.

Owners tend to give contractors between 20 and 30 percent advances, with additional payments as floors are completed. Contractors similarly give advances to subcontractors, one plumber reporting that 50 percent downpayments were common.

In Kafr el-Gabal there were three types of sales throughout the supply process: "be'ia beda" (literally, white cash), "be'ia balga" (half cash), and "be'ia soda" (all credit). Interest for this informal credit was 5 percent.<sup>1</sup>

Although there were few complaints concerning a lack of finance, it is clear that the rate at which it was available, usually on a windfall or transitory basis, determined the rate of land development and construction. This is discussed at greater length in Chapter 8.

### Marketing

Throughout the supply side of the informal sector, marketing is by family connection and other personal contact. Only one participant interviewed, a subdivider, used newspaper advertisements.

The Kafr el-Gabal community study (see Appendix 3) describes the roles of three local families and their control of the informal housing sector in the area. A major point of contact for these families was the local soccer team; a member of one was the captain.

Other studies, confirmed by some of this study's in-depth interviews, indicate that informal settlements or parts of these settlements are dominated by people from a particular tribe, region or group of villages, with many of the old networks and informal political and business systems intact.

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<sup>1</sup>Loans are available at 7 percent in the AID supported Helwan Project, with repayments at the rate of 25 percent of income. The loans are targeted at people with an annual income of LE 900.

Several consequences follow from this situation for the low and moderate income groups. First, the relatively small amount of funds available for mortgages from the central does not reach a broad spectrum of households. Instead they are channeled to a few upper income households. For the majority, formal sector housing finance is not relevant. Second, mortgage funds are made available to formal housing. To be eligible for credit, the housing must be in the 'formal' sector, i.e. the household must have legal title to the land, use building permits and 'formal' construction methods. Consequently, much of this credit is provided to cooperative housing, hotels, etc. Third, the income distribution typical of a developing country such as Egypt is non-egalitarian and 'tilts' these mortgage funds to the upper income groups. Thus, 68 percent of the mortgages that were executed in 1977 by the Credit Foncier were for loans in excess of LE 10,000 (Pratt Associates, 1979). This figure is well beyond the reach of most urban households--whose median 1981 income was approximately one-tenth that level. (See Chapter 8 for a more extended analysis of income and "affordability" of housing).

Informal suppliers are faced with similar problems. Of all interviewed direct participants in the construction process only two had ever dealt with a bank. A Nasr City subcontractor once borrowed LE 5,000. He had to supply his academic record, social record, and a resume of past experience and provide some security. The interest rate was 14 percent. A Dar as-Salaam electrical goods supplier said that he occasionally dealt with banks. The banks will only extend credit on the basis of registered land or buildings on registered land.

Even when suppliers might qualify for credit, they may not apply. Some do not understand or trust financial institutions. Some believe that formal institutions are not flexible enough to respond to the erratic income stream of informal suppliers, and are likely to foreclose after the first late payment. Others are reluctant to get involved with formal institutions because so many of the activities in which they are involved (including tax evasion) are illegal, and thought best to remain undocumented (M.7).

All of these factors restrict the ability of informal suppliers to provide credit to homeowners, except on a short-term basis. Informal homeowners and suppliers rely, instead mainly on their own savings, often accumulated over short periods of time.

## CHAPTER 7

### Housing Needs and Housing Outcomes

It is widely alleged that a severe shortage of housing exists in Egypt, particularly in Cairo. Other research, however, has indicated that the concept of a "housing shortage" must be carefully defined in the Egyptian context if evidence is to be found concerning its existence. For example, Wheaton (1980, p. 51), in reviewing available evidence claimed that by some definitions "the shortage of housing really does not seem to exist." To reach such a conclusion, Wheaton compared housing unit changes to population changes, examined space consumption (persons per room), and access to infrastructure and found that improvements were being realized in each area in Greater Cairo.

In this chapter, a broad range of housing outcomes is examined to define the nature of current housing needs and to identify the major dimensions in which housing "shortages" may be said to exist. Section 7.1 examines factors affecting the aggregate demand for housing units by the population--migration, household formation, moves by established households from one residence to another, and investment demand for units. The aggregate housing supply is compared to aggregate demand and the distribution of excess units (vacancies and units under construction) among formal and informal housing areas is noted. The following sections examine the incidence of doubling-up or crowding (in the form of maintaining non-nuclear families, subletting, or having high numbers of persons per room), the incidence of specific housing unit and building features (presence of toilet and kitchen facilities, building structural condition, etc.), and access to infrastructure and services. Expressed levels of satisfaction with dwelling and neighborhood characteristics and their determinants are explored, and expressions of willingness to pay for specific neighborhood improvements are noted.

#### 7.1 Aggregate Demand for Housing

It is important to understand the broad trends that shape the demand for housing in Cairo and Beni Suef. As indicated in Chapter 3,

population growth in Cairo has been particularly rapid for several decades-- from 3.8 to 3.9 percent per year, while that in Beni Suef has been lower-- only about 2.4 percent per year.

In evaluating the pressures for housing construction created by these population changes, it is important not simply to disaggregate the changes into those caused by natural increase and migration, but rather into behavioral units more fundamentally related to demand pressure in the housing market; namely, household formation, net immigration, and moves from one dwelling to another by the established (non-migrant) population. Newly formed households, immigrants, and moving established households may create quite different kinds of demand pressures because of differences in incomes, wealth, family sizes, or locational preferences. Each group may choose different types of housing, different areas in the city, and different tenure patterns.

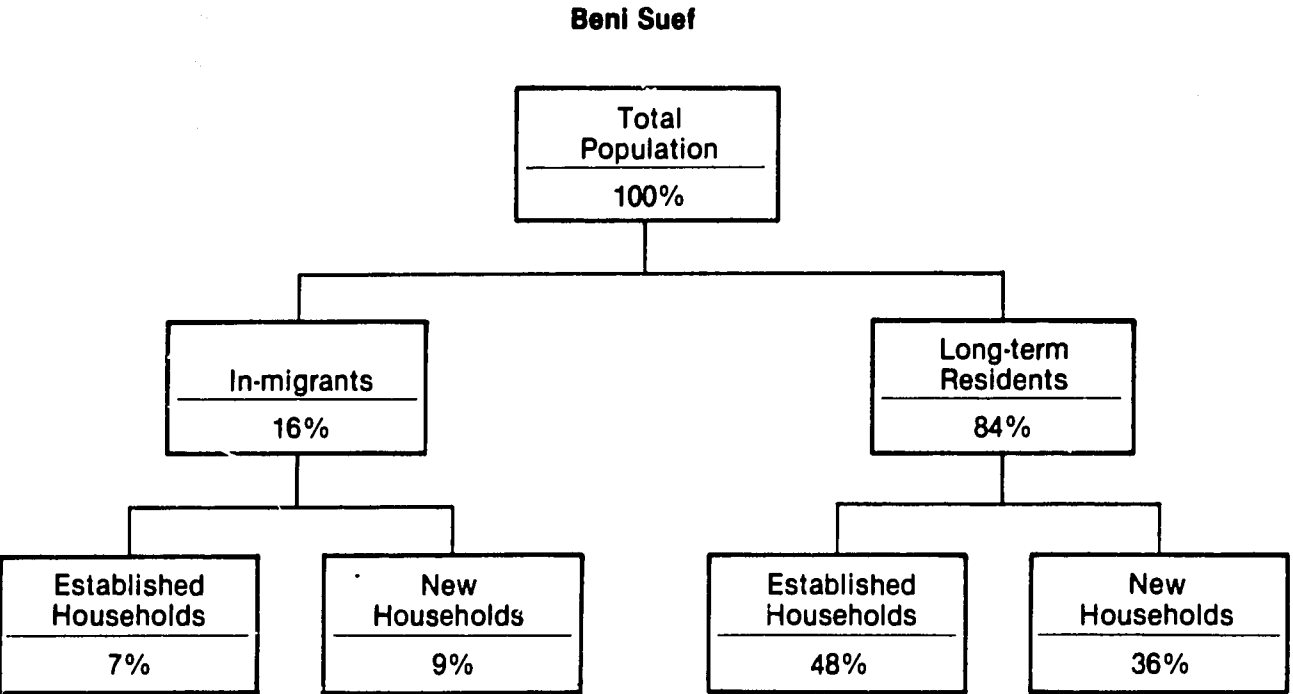
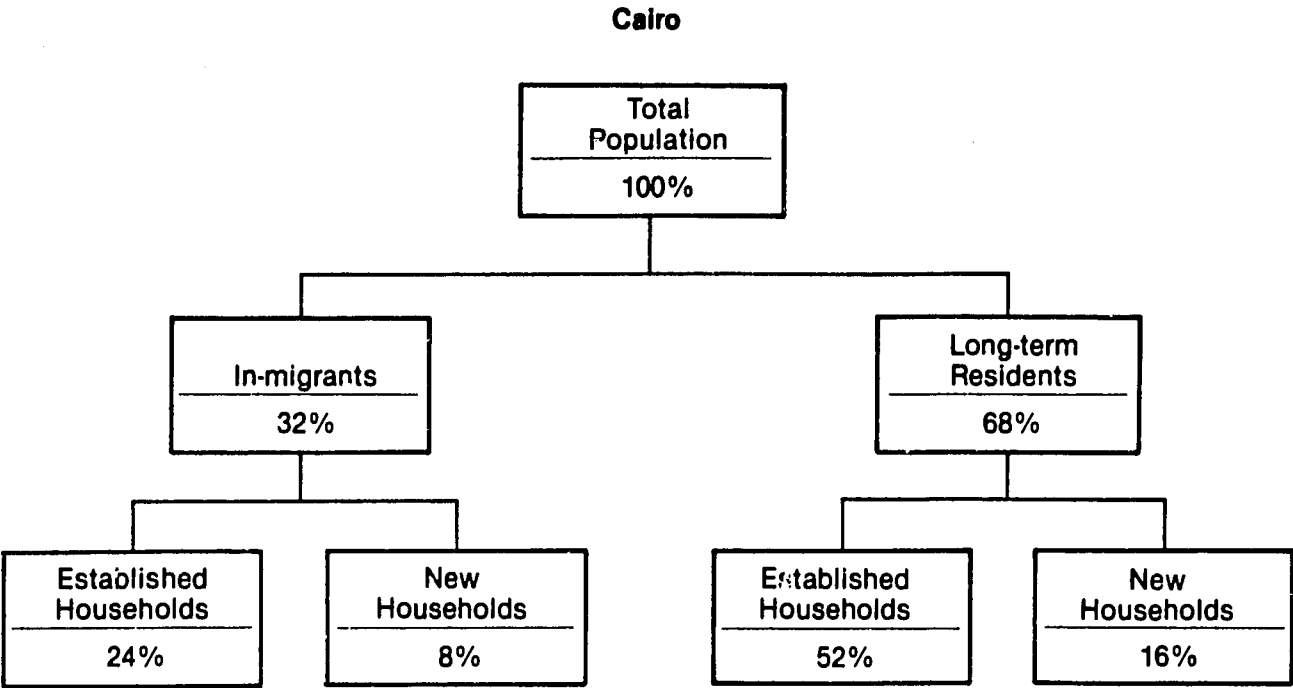
Figure 7-1 illustrates how households that moved within the past ten years in Cairo and Beni Suef are divided among these groups. As the figure indicates, migration plays an important, though far from dominant role in housing demand in Cairo. For example, of households that moved into units in Greater Cairo between 1971 and 1981, 32 percent were headed by recent immigrants--persons who spent the greater part of their lives outside the Cairo area.<sup>1</sup> Of the remaining 68 percent of recent movers, roughly 24 percent of them (16 percent of all recent movers) were headed by persons who previously lived with their families and thus constituted newly formed households.<sup>2</sup> The remaining 76 percent (52

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<sup>1</sup>Of households moving into units within the past 10 years, 45 percent were headed by persons born outside the Cairo area. The difference in the proportions of migrants defined in terms of birth-place and migrants defined in terms of where household heads spent most of their lives is considerable, indicating that a substantial fraction of immigrants to Cairo move again after first settling into the area.

<sup>2</sup>About one-quarter of recent immigrants were also newly formed households.

**Figure 7-1  
Components of Aggregate Demand**



**Source: Weighted Occupant Survey**

percent of the total) were headed by persons who were previously renting or owned a unit, who had lived in the Cairo area for most of their lives, and who were simply changing their place of residence.

Migration is even less important in Beni Suef than in Cairo. Only about 16 percent of movers within the past ten years had spent the greater part of their lives outside of Beni Suef governorate. Household formation is comparatively more important in influencing aggregate demand in Beni Suef than in Cairo, with 43 percent of recent non-migrant movers (36 percent overall) constituting newly formed households. The remaining 57 percent of non-migrant movers (48 percent overall) were previously established renters or owner households simply changing place of residence.

Thus migration is not the dominant factor in creating pressure on either housing market; rather it is the movement of established households. These latter households outnumber migrants by roughly two to one, and also outnumber newly formed households.

As indicated in Chapter 3, the housing stock in each city has increased at a rate sufficient to meet the demands of both immigrants and newly formed households over the past decade. Indeed, in Cairo, recent increases in the stock have permitted a sizeable number of already formed households to move and a growth in the number of vacant housing units (to about 5.5 percent of the occupied housing stock). In Beni Suef, previously formed resident households have also been permitted to move, but vacancies have contracted slightly to about 3 percent of the 1981 housing stock.

Case study and in-depth interviews have tended to confirm the apparent anomaly of a large and possibly growing housing surplus during a time of widely perceived housing shortages. In study areas around Cairo, reasons advanced for high vacancy levels were that (1) many vacancies are in luxury buildings with prices far beyond the reach of even relatively well-off Egyptians; (2) vacant units are being held by some speculator-owners in expectation of higher future housing prices; and (3) empty units are being held by some owners for future occupancy for married offspring. Each of these explanations constitutes in a sense an expression of an investment demand for housing that goes beyond a



demand for housing use. In each case, examples were heard of how the future rather than the present sales or rental price was the relevant motivation for construction and for holding units off the market. As the next chapter indicates, housing costs and rentals have been rising so rapidly that investment in housing which is not immediately placed on the market appears capable of providing some owners with higher rates of return than investment in housing which is leased immediately. Moreover, as the next chapter indicates, repatriations from abroad appear to have a high propensity to be directed into land and housing investments; given the rate at which such repatriations have been increasing, a substantial part of the recent surge in construction in Cairo must be attributed to the pressure of households with repatriated earnings in search of appropriate investments.

Regardless of the sources of rapid housing stock and vacancy increases in Cairo, it is clear that that they are not confined to the luxury housing market. As indicated in Chapter 4, recent construction has been overwhelmingly informal. Moreover, it appears that housing vacancies are more heavily concentrated in highly informal areas than in formal areas. Table 7-1, for example, presents estimated vacancy rates in enumeration districts sampled in Greater Cairo broken out by the percentage of the housing stock estimated to be informal in those areas:

As the table indicates, vacancy rates are estimated to be higher than average in primarily informal areas--from 5.7 to 6.3 percent compared to from 4.2 to 4.3 percent for primarily formal areas. Moreover, because highly informal areas (those with an estimated 76-100 percent informal units) comprise a larger share of enumeration districts than any single other group, a majority (56.2 percent) of all vacant units in 1981 were estimated to be in highly informal areas.<sup>1</sup>

These figures suggest that whatever mismatch may have existed between supply and demand for housing in the Cairo area, it is highly

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<sup>1</sup>Units under construction were estimated to be even more heavily skewed to highly informal areas--72 percent of all units under construction were estimated to be in such areas.

Table 7-1

Estimated 1981 Vacancy Rates in Cairo  
Enumeration Districts by Degree of Informality<sup>1</sup>  
(percent)

<u>Estimated Percentage of Informal Housing in District</u>	<u>Vacancy Rate</u>	<u>Percentage of all Vacancies in Greater Cairo</u>
0-25	4.3%	19.1%
26-50	4.2	12.8
51-75	6.3	11.9
76-100	5.7	<u>56.2</u>
		100.0

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<sup>1</sup>Source: Scanning survey. Vacancy rate is defined as vacant units divided by occupied units.

unlikely that it has become worse in recent years--at least in the sense of population changes exceeding the performance of the housing supply sector. Nor does it appear that the apparent surplus of housing that has been produced recently has been concentrated in the formal sector; both vacancy rates and rates of construction have been higher in the informal sector than in the formal sector within the past five years.

Thus explanations for the apparent housing shortage must be sought elsewhere than in a simple mismatch between the number of households and the number of housing units. As the following sections indicate, there are indeed major housing needs among Egyptians but these are more related to specific features of housing and infrastructure and to housing cost than to the inability of households to find shelter.

## 7.2 "Unsatisfied Demand" for Housing?

It is presumed that in the face of an alleged housing shortage households will modify their housing consumption patterns to accommodate the squeeze imposed by the marketplace. Ways in which this might occur are by "doubling up," in some cases by maintaining extended, intergenerational families rather than splitting into nuclear families, and in other cases by subletting rooms to non-relatives; or by allowing interior densities to increase rather than by moving to larger accommodations or expanding existing ones. If such accommodations are necessary one might expect to find a high incidence of expressed dissatisfaction with housing. Thus one may expect to find evidence of "unsatisfied demand" either in quantitative measures such as the incidence of extended or intergenerational families, subletting, or interior densities (e.g. persons per room) or in the expressed opinions of households about their housing.

### The Incidence of Extended or Intergenerational Families

Households were classified in this study on the basis of relationships among household members. Four categories were established, nuclear (single individuals or couples living alone or with their unmarried children); intergenerational (families with married children present), extended (families with adult relatives but without married

children), and intergenerational-extended (families with both married children and other adult relatives). The distribution of these household types among formal and informal households is given in Table 7.2. There are no significant differences in household types between formal and informal households in either city. Nuclear families dominate family structure in both cities, with over 80 percent of all households in this category. Evidence is not strong of market-imposed doubling-up in the form of maintaining other than nuclear families. While Cairo is alleged to have a more serious housing shortage than Beni Suef, Cairo has no higher incidence of non-nuclear families. Furthermore, there is only a modest association between family structure and income (82 percent of Cairo households below the median income are nuclear families but 87 percent of above median income households are); were households modifying family structure to accommodate to market conditions, one might expect to find a greater difference in family structure between households "forced" to accommodate and those able to afford not to.

#### Subletting

Subletting in many countries takes the form of renting to unrelated individuals within a dwelling unit. In neither Cairo nor Beni Suef is this practice common. In Cairo, only 1.0 percent of households report subletting within their dwelling; in Beni Suef, only 3.2 percent. As is the case with family structure, there is only a modest negative relationship between the incidence of subletting and income, indicating that few households have been economically forced to accommodate to housing shortages by subletting within their own dwelling units.

#### Space Consumption

Space consumption may be measured in two principal ways: the number of rooms in a family's dwelling unit and the number of persons per room. The number of rooms is an absolute measure of the space available to the family, while persons per room is a crowding measure which varies with the size of the family.

Table 7-2

Distribution of Households by Household Type  
(Percentage)

<u>Household Type</u>	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Nuclear	83.3%	85.2%	86.3%	81.2%
Intergenerational	6.3	4.8	0.0	4.4
Extended	7.6	6.3	10.7	12.5
Intergenerational-Extended	1.0	1.6	3.0	1.3
Missing (unclassified)	1.8	2.0	0.0	0.6

Source: Weighted occupant survey.

Previous research has suggested that space consumption in Egypt and in Cairo in particular has increased moderately over the past two decades. Wheaton (1980), for example, cites CAPMAS data which indicate that the number of persons per room in Cairo declined from 2.3 in 1960 to 2.0 in 1966 and 1.9 in 1976.<sup>1</sup> While definitional problems cloud the confidence that can be placed in this result, it is consistent with the data of this study.

Unit size--The median unit size of sampled households is three rooms, regardless of whether a household is from Cairo or Beni Suef, an owner or renter, or in the formal or informal sector. Mean numbers of rooms vary somewhat, as indicated in Table 7-3. Owners have about 20 percent more rooms than renters in each city. Formal and informal households have comparable numbers of rooms in Cairo, but in Beni Suef informal households have more rooms. This is attributable mainly to a higher incidence of ownership among informal households in Beni Suef. These figures are in line with the norm established by the Egyptian government policy, which declares that a family should have three to four rooms in its dwelling (Wheaton, 1981, p. 55).

The most important determinant of space consumption is family income (see Table 7-4). As owners' incomes increase from the lowest to the highest income quartile, mean rooms increase from 3.3 to 4.4 in Cairo and from 2.5 to 5.1 in Beni Suef. Among renters the increase in rooms from the lowest to the highest income quartile is from 2.6 to 3.8 in Cairo and from 2.0 to 3.9 in Beni Suef.

The number of rooms is affected less by family size than by income (see Table 7-4). While larger families generally occupy somewhat more rooms than do smaller families, the difference is far less than proportional--indicating that crowding (in terms of persons per room) increases rapidly with family size.

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<sup>1</sup>As Wheaton notes, it is possible that this decline is overstated because of the potential impact of a change in the CAPMAS definition of a "room" from 1960 to later periods. Even with parametric adjustments to 1966 and 1976 figures, however, it did not appear to Wheaton that persons per room had increased (pp. 5 and 6).

Table 7-3

Mean Rooms per Dwelling Unit by Submarket

	<u>Mean Rooms</u>
<u>Cairo</u>	
Owners	3.64
Renters	3.22
Formal	3.35
Informal	3.37
All	3.35
<u>Beni Suef</u>	
Owners	3.46
Renters	3.10
Formal	3.01
Informal	3.41
All	3.35

Source: Weighted occupant survey.

Table 7-4

Mean Rooms per Dwelling Unit by Income and Household Size

	Cairo		Beni Suef	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
<u>Income Quartile</u>				
1 (Lowest)	3.3	2.6	2.5	2.0
2	3.2	3.0	3.4	2.5
3	3.7	3.4	3.6	2.5
4 (Highest)	4.4	3.8	5.1	3.9
<u>Household Size</u>				
1 - 2	3.6	2.4	2.8	2.1
3 - 4	3.5	2.4	3.2	3.2
5 - 6	3.8	2.7	3.2	3.3
7+	3.6	3.2	4.0	2.8

Source: Weighted occupant survey.



A multivariate regression confirms the comparative impacts of income and family size on space consumption. The natural logarithm of rooms was regressed on the natural logarithm of household income (using a measure of "permanent" income<sup>1</sup>), and categorical variables indicating household size categories, educational attainment of the head of household, homeownership, and formal/informal status. Results of the estimated equations are given in Table 7-5.

The coefficient of the log of permanent income indicates that as permanent income increases by 10 percent, the average number of rooms increases by 3 percent in Cairo and by 2 percent in Beni Suef. The size of the family has no effect on the number of rooms in Beni Suef. In Cairo families with 5-6 people have on average 11 percent more rooms than either smaller or larger families. In Beni Suef families whose head has a university degree have an average of 35 percent more rooms than other families. These two variables are not significant in the equations estimated for only homeowners. For owners, only permanent income affects the number of rooms the family occupies. On average, owners have more rooms than renters. In Cairo the average number of rooms for owners is 19 percent higher than the average for renters, controlling for other variables. In Beni Suef the difference is larger--27 percent. In Cairo there is no difference between the formal and the informal sectors in terms of number of rooms. In Beni Suef there is a difference mainly in the rental sector where families that rent in the informal sector have an average of 35 percent more rooms than those that rent in the formal sector.

The regression equations just discussed imply that crowding as measured by number of persons per room will be negatively related to permanent income, because the number of rooms occupied increases as income increases. And, crowding will be positively related to the size of the family because in general the number of rooms a family occupies is unrelated to its size. These relationships are indicated in Tables 7-6 and 7-7, which indicate mean and median persons per room by submarket and

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<sup>1</sup>Permanent income is the "normal" or "expected" income of a family exclusive of transitory elements. It was estimated for sample households by the predicted income from a regression of reported income on total reported expenditures, education, occupation, and birthplace of the household head.

Table 7-5

The Determinants of Space Consumption  
[Dependent Variable-- ln (Rooms)]  
(Standard Errors in Parentheses)

	Cairo			Beni Suef		
	<u>All</u>	<u>Renter</u>	<u>Owner</u>	<u>All</u>	<u>Renter</u>	<u>Owner</u>
Intercept	-.428	-.425	-.203	.008	-.370	.432
Owner	.175** (.049)	--	--	.236** (.075)	--	--
Informal	.052 (.045)	.080 (.053)	--	.163+ (.092)	.299** (.097)	--
ln Permanent Income	.304** (.042)	.301** (.048)	.307** (.086)	.190** (.032)	.252** (.076)	.167** (.037)
University Degree	--	--	--	.298** (.118)	.293** (.110)	--
Size 1 - 2	--	--	--	--	--	--
Size 5 - 6	.105* (.048)	.101+ (.057)	--	--	--	--
Size 7 +	--	--	--	--	--	--
R <sup>2</sup>	.15	.14	.11	.20	.46	.15
N	372	262	109	240	64	176

Key: \*\*Significant at the 0.01 level.  
 \*Significant at the 0.05 level.  
 +Significant at the 0.10 level.

Source: Occupant survey

Table 7-6

Mean and Median Persons Per Room by Submarket

	<u>Mean Persons Per Room</u>	<u>Median Persons Per Room</u>
<u>Cairo</u>		
Owners	1.78	1.60
Renters	1.92	1.67
Formal	2.05	1.67
Informal	1.76	1.50
All	1.87	1.67
<u>Beni Suef</u>		
Owners	1.97	1.60
Renters	1.80	1.50
Formal	2.28	1.67
Informal	1.85	1.50
All	1.92	1.50

Source: Weighted occupant survey.

Table 7-7

Mean Persons Per Room by Income and Household Size

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
<u>Income Quartile</u>				
1 (Lowest)	1.59	2.17	1.79	1.12
2	1.77	2.02	2.19	1.91
3	2.17	1.92	2.32	2.18
4 (Highest)	1.53	1.58	1.35	1.59
<u>Household Size</u>				
1 - 2	0.68	0.87	0.69	0.69
3 - 4	1.29	1.79	1.48	1.35
5 - 6	1.58	2.64	2.19	1.86
8 +	2.52	2.94	2.69	3.59

Source: Weighted occupant survey.

variations by income and family size, and further confirmed by regression equations with the log of the number of persons per room as a dependent variable (see Table 7-8). Table 7-6 indicates that mean persons per room are essentially the same in 1981 as indicated in 1976 CAPMAS statistics. Based on the regression equations, in Cairo the number of persons per room declines by about 2.5 percent for every 10 percent increase in permanent income. In Beni Suef a similar income increase induces a 2 percent decrease in the number of persons per room in the rental sector. Among owners the decrease is 1 percent. Renters with university degrees are less crowded than other renters. The difference is 15 percent in Cairo and 22 percent in Beni Suef.

The household size coefficients indicate crowding relative to families with three to four people, which serve as a reference group. They illustrate dramatically the effect of variations in the size of the family with relatively uniform dwelling unit size. Families with only one or two people are 52 percent less crowded in Beni Suef. In Cairo, families with five to six people are 32 percent more crowded than those with three to four people; in Beni Suef the difference is 49 percent. In both cities families with seven or more people have twice as many people per room as families with three to four people.

Thus, while the incidence of crowding, in terms of persons per room, does not appear to have been increasing over time, it is clear that among low income groups and large families, crowding is acute.

### 7.3 Housing Tenure

The mode of housing tenure, whether the dwelling unit is owned by the occupant or rented from others, is, as shown by the previous section, an important determinant of housing consumption. It is also an important housing outcome in its own right.

Most households, whether owners or renters, would prefer to own rather than rent. Among owners in Cairo and Beni Suef, 91 percent and 100 percent respectively expressed a preference for owning; among renters, Cairo and Beni Suef proportions who would prefer to own were 75 and 82 percent respectively. Expressed reasons for preferring to own were overwhelmingly "not having to pay rent" and "security." Hardly any households

Table 7-8

The Determinants of Crowding  
 [Dependent Variable: ln (Persons per Room)]  
 (Standard Errors in Parentheses)

	<u>Cairo</u>			<u>Beni Suef</u>		
	<u>All</u>	<u>Renter</u>	<u>Owner</u>	<u>All</u>	<u>Renter</u>	<u>Owner</u>
Intercept	1.463	1.468	1.316	0.871	1.416	.659
Owner	-.145** (.052)	--	--	--	--	--
Informal	-.077+ (.047)	-.111* (.056)	--	-.210* (.098)	-.363** (.094)	--
ln Permanent Income	-.240**	-.238** (.065)	-.245** (.094)	-.105** (.037)	-.198* (.094)	-.110** (.042)
University Degree	-.155+ (.087)	-.165+ (.100)	--	-.294* (.125)	-.251* (.133)	--
Size 1 - 2	-.734** (.087)	-.705** (.107)	-.778** (.155)	-.1876** (.107)	-.832** (.167)	-.867** (.132)
Size 5 - 6	.279** (.061)	.288** (.070)	.211+ (.132)	.399** (.089)	.426** (.115)	.434** (.119)
Size 7 +	.707** (.062)	.703** (.075)	.671** (.122)	.638** (.083)	.761** (.145)	.641** (.104)
R <sup>2</sup>	.51	.52	.51	.51	.65	.48
N	373	263	110	240	64	176

Key: \*\*Significant at the 0.01 level.  
 \*Significant at the 0.05 level.  
 +Significant at the 0.10 level.

Source: Occupant survey.

mentioned housing as a good "investment" as the principal reason to own.

These preferences are not reflected in actual behavior, as only 31 percent of Cairo households and 74 percent of Beni Suef households surveyed are owners of their dwellings. Among informal households in Cairo, owning is somewhat more prevalent (32 percent versus 29 percent for formal households). In Beni Suef, most formal sector households (58 percent) are renters, located in Beni Suef city rather than in surrounding villages.

In Cairo, ownership of a dwelling does not always imply ownership of the building in which the dwelling is located; 26 percent of Cairo owners own the dwelling unit only, 15 percent own the dwelling and part of the building, and the remaining 59 percent own both the dwelling unit and the building. In Beni Suef, where buildings contain fewer units, owners are much more likely to own the entire building (91 percent do so).

Ownership status, despite being preferred by households, is not positively related to income. In Cairo the first quartile of the income distribution has 38 percent owners while the highest quartile has only 29 percent. In Beni Suef, the relationship is even stronger and, like Cairo, negative; 92 percent of the lowest quartile are owners compared to 48 percent for the highest quartile. Household size is positively related to ownership, although the relationship is a weak one.

Patterns of ownership appear to be strongly influenced by housing market conditions, especially housing costs. Cairo, which has higher costs of ownership than Beni Suef (mainly because of higher land costs) has comparatively fewer owners.<sup>1</sup> At the margin of new construction, there appear to be neither more nor less new units being built for renter or owner occupancy in Cairo, however, indicating that relative prices of owning and renting have probably not changed much there recently.<sup>2</sup>

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<sup>1</sup>Costs for renters are more similar between the two cities since densities adjust to land cost differences. Thus, for example, in Beni Suef a typical rental unit is in a two unit building whereas in Cairo it is in a four unit building. Thus, in Beni Suef, land costs are prorated over two units but in Cairo, where land costs are twice as high they are prorated over four units--making rents similar.

<sup>2</sup>Of households that moved into units between 1976 and 1980, 29 percent were owners; of those moving into units in earlier periods, 27 percent were owners.

#### 7.4 Dwelling Unit, Building and Neighborhood Outcomes

A number of different aspects of housing may be related to family health, safety, well-being, and convenience. This section discusses the following housing and neighborhood attributes:

1. Building Structural Condition
2. Public Utilities and Sanitation
  - a. Connection to electricity
  - b. Piped water for the unit or building
  - c. Connection to public sewer system
  - d. Bathroom or toilet in the unit
  - e. Separate kitchen in the unit
3. Neighborhood Services
  - a. Access to public transportation
  - b. Hospital or clinic in the area
  - c. School and/or nursery in the area
4. Environmental Problems
  - a. Garbage accumulation on the street
  - b. Stagnant water on the street

##### Building Condition

Household interviewers in the occupant survey (most of whom were graduate students or junior faculty members in Cairo area architecture/engineering university departments) categorized buildings into four categories of structural soundness--"good," "average," "bad," and "about to collapse." While far from scientific, these categories are broadly indicative of the condition of the housing stock. Figure 7-2 illustrates the distribution of good housing vis-a-vis "bad" or "about to collapse" for housing built at different times in Cairo and Beni Suef. As the figure indicates, overall 50 percent of Cairo housing is classified as being in "good" condition, whereas only 31 percent of Beni Suef housing is so classified. By contrast, 13 percent of the Cairo sample was classified as "bad" or "about to collapse" and 27 percent of the Beni Suef sample was so classified.<sup>1</sup>

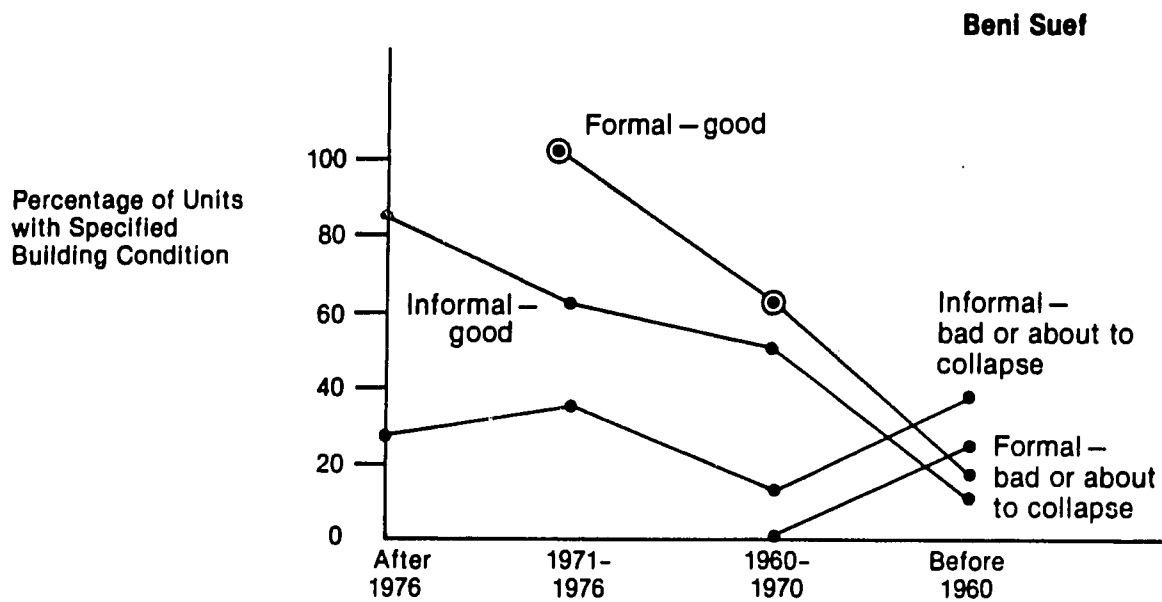
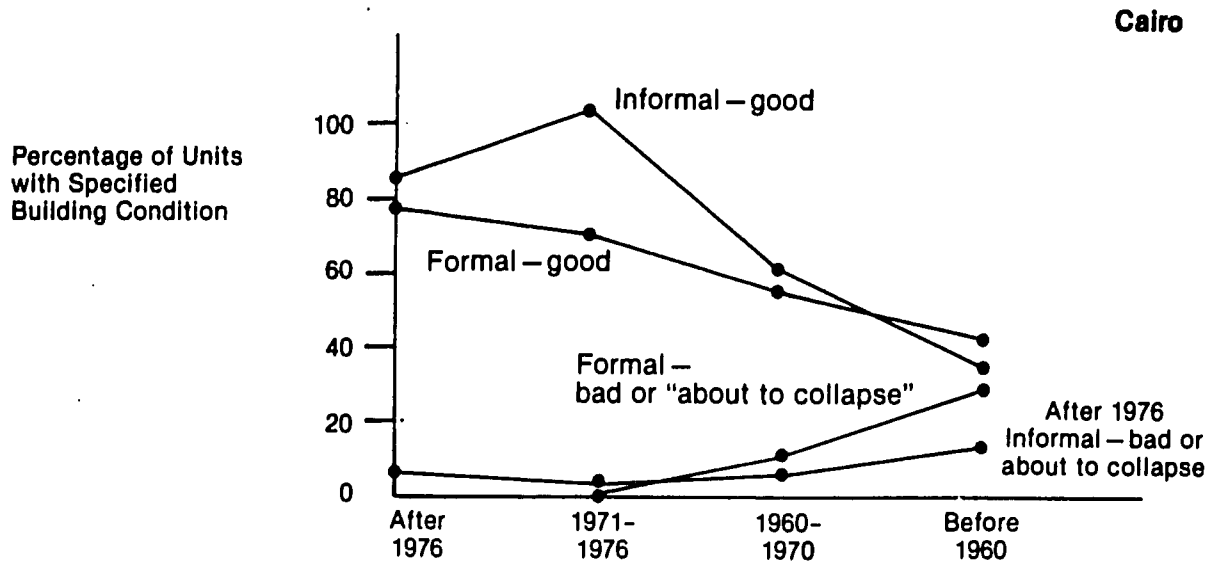
Overall, informal housing is estimated to be in better average structural condition than formal housing, with 56 percent of informal housing units in Cairo classified as "good," compared with only 40 percent

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<sup>1</sup>Two percent and three percent, respectively, of units in Cairo and Beni Suef were in buildings classified as "about to collapse." Based on estimates of units in 1981 by the scanning survey, this implies that roughly 40,000 housing units in Greater Cairo are in buildings classified as "about to collapse."



**Figure 7-2**  
**Building Condition by Time of Construction**



⊙ Fewer than 5 observations

Source: Weighted Occupant Survey

of formal housing units. In Beni Suef, the situation is the same, with 33 and 20 percent respectively of informal and formal housing classified as good. The main explanation for this surprising result may be found in Figure 7-2, recalling that recent construction has been heavily dominated by the informal sector.

As Figure 7-2 illustrates, all housing built since 1970 in each city is characterized by the fact that formal housing is more likely on average to be classified as good than is informal housing. One would expect formal housing to be better than informal housing at the time it is built and, indeed, it appears to be. On the other hand, most recently built informal housing is better than most older formal or informal housing; since 1960, a higher proportion of newly built informal units have been classified as good than is true of the housing stock as a whole. The converse is that most pre-1960 units, whether formal or informal, are less likely than average to be classified as good. Because informal construction has dominated recent additions to the stock, the average condition of informal housing is heavily weighted by the "good" units that have been added recently. Conversely, because the formal housing stock is dominated by older units, its average condition is heavily weighted by the older units classified as "average," "bad," and "about to collapse."

It should further be noted that overall, in Cairo, units classified as "bad" or "about to collapse" in the formal sector outnumber those so classified in the informal sector by roughly two to one; in Beni Suef, the situation is reversed. In part because there are so few formal units in Beni Suef, there appear to be about ten times as many informal units classified as "bad" or "about to collapse" as there are similarly classified formal units.

In summarizing the information presented in Figure 7-2, it is clear that recently built informal housing has added significantly to the overall physical quality of the housing stock. Thus, informal housing has been the source not only of most housing units in recent years, but also of most units of good structural quality.

On the other hand, there is a significant fraction of the housing stock that is in poor structural condition--an estimated 13 percent of the Cairo stock and 27 percent of the Beni Suef stock. Thus, overall improvement in housing will depend on continuing high levels of both formal and informal construction and, at the same time, upgrading or replacing old existing buildings in poor condition.

Public Utilities and Sanitation, Neighborhood Services, and Environmental Problems

Tables 7-9 and 7-10 present comparative data on outcomes in a number of areas for renters and owners in the formal and informal sectors. Salient differences among different households are as follows:

1. Public utilities and sanitation services. The availability of these services is quite high in Cairo, less so in Beni Suef. Comparing renters and owners, in Cairo a larger proportion of renters than owners has water and sewer connections and a bathroom or toilet.<sup>1</sup> Both renters and owners are almost universally served by electricity. The lack of services in Beni Suef is more concentrated among owners than renters. While Beni Suef renters have almost the same access to electricity as do Cairo households, the incidence of electrical connections among owners there is only 65 percent. Among Beni Suef owners only one in three is served by public water connections; only one in six by public sewer connections. Partly as a consequence, the incidence of bathrooms, toilets, and kitchens is also low for Beni Suef owners.

As suggested in Chapter 3, the incidence of connections to public water and sewer lines is significantly lower among informal households in Cairo, although electricity connections are comparable between formal and informal households. In Beni Suef the informal sector has significantly lower availability of all public utilities, bathrooms or toilets, and kitchens.

2. Neighborhood services. Neighborhood services are generally better provided in Cairo than in Beni Suef. In both cities renters have better access to public transportation than do owners. Informal households are significantly less well served than formal households in terms of all neighborhood

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<sup>1</sup>These differences between renters and owners are significant at the 0.01 level. Such differences are explainable in light of the different sorts of buildings occupied by renters and owners. Renters, for example, tend to occupy buildings with a greater number of dwelling units than owners; as noted in Section 5.1, larger buildings are much better served by public utilities than are smaller buildings.

Table 7-9

Housing Outcomes: Percent Distribution by Formality and Tenure Status

	<u>Cairo</u>					
	<u>Formal</u>			<u>Informal</u>		
	<u>Renter</u> n=128	<u>Owner</u> n=51	<u>All</u> n=179	<u>Renter</u> n=198	<u>Owner</u> n=91	<u>All</u> n=289
Electricity	98.4	98.8	98.5	98.9	95.2	97.7
Water	98.9	98.8	98.9	77.3	59.7	71.7**
Sewer	94.2	92.7	93.8	91.2	72.8	85.4**
Bath/Toilet	98.9	100.0	99.2	100.0	92.3	97.6
Kitchen	91.1	88.3	90.3	95.3	75.5	89.1
Public Transport	100.0	85.7	95.9	84.8	74.6	91.6**
Hospital/Clinic	85.3	90.2	86.7	90.5	88.4	89.9*
School/Nursery	94.8	81.4	91.0	83.4	79.2	82.1**
Garbage on Street	36.2	33.9	35.5	44.9	51.8	47.1**
Stagnant Water	50.0	49.0	49.8	43.6	46.2	44.4

Note: \*Significant difference between formal and informal sector at the 0.05 level; \*\*significant difference between formal and informal sector at the 0.01 level.

Source: Weighted occupant survey.

Table 7-10

Housing Outcomes: Percent Distribution by Formality and Tenure Status

	<u>Beni-Suef</u>					
	<u>Formal</u>			<u>Informal</u>		
	<u>Renter</u> n=19	<u>Owner</u> n=14	<u>All</u> n=33	<u>Renter</u> n=52	<u>Owner</u> n=157	<u>All</u> n=209
Electricity	100.0	93.5	97.3	94.1	63.2	70.9**
Water	90.6	93.5	91.6	89.0	27.4	44.3**
Sewer	90.6	80.2	86.4	55.2	11.2	22.8**
Bath/Toilet	100.00	100.0	100.0	93.0	46.1	58.1**
Kitchen	62.3	35.1	51.0	85.0	18.4	35.5+
Public Transport	0.0	10.0	4.2	58.9	14.4	25.8**
Hospital/Clinic	61.9	47.9	56.1	82.3	52.0	59.8
School/Nursery	87.8	76.3	83.0	76.7	82.3	80.8
Garbage on Street	9.0	0.0	5.3	15.0	14.9	14.9
Stagnant Water	0.0	0.0	0.0	21.9	3.6	8.3

Note: \*\*Significant difference between the formal and informal sector at the 0.01 level.

\*Significant difference at the 0.05 level.

+Significant difference at the 0.10 level.

Source: Weighted occupant survey.

services.<sup>1</sup> In Beni Suef neighborhood service levels are generally comparable in the two sectors.

3. Environmental Problems. The incidence of garbage and stagnant water in the streets is much higher in Cairo than in Beni Suef. While in Cairo there are no differences between renters and owners in terms of these outcomes, in Beni Suef renters are significantly more likely to experience stagnant water in streets.

#### 7.5 Attitudes and Preferences Regarding Housing and Neighborhood Problems

An important part of assessing housing needs is to know what households themselves perceive to be desirable and undesirable housing and neighborhood features. This section examines households' expressed satisfaction with dwelling units and neighborhoods, perceptions of good and bad features of each, and attitudes concerning willingness to pay for certain improvements. The comparative importance of various dwelling and neighborhood features is assessed.

#### Overall Satisfaction With Housing and Neighborhoods

Households were asked to express opinions about their dwellings and neighborhoods in terms of whether they were "very satisfied," "somewhat satisfied," or "not satisfied." Households that said they were very or somewhat satisfied were classified as "satisfied." Percentages of different types of households classified as satisfied with housing and neighborhoods are given in Table 7-11.

The majority of Cairo and Beni Suef households are satisfied with both housing and neighborhoods, although in each city a significant minority claims not to be satisfied. In Cairo, 71 percent of households are satis-

<sup>1</sup> Other neighborhood amenities are also less well provided among informal areas in Cairo. The following, for example, indicates the incidence of various neighborhood amenities in Cairo:

<u>Percentage of households with:</u>	<u>Formal</u>	<u>Informal</u>
Streetlights	65.1	49.8
Paved road	34.9	28.6
Sidewalks	45.9	31.4
Curbs	44.3	29.5

where all differences are significant at or above the 0.05 level. As in the case of basic utilities, informal housing units in informal neighborhoods have lower incidence of infrastructure than informal units in formal neighborhoods.

Table 7-11

Satisfaction with Housing and Neighborhood  
(Percent "Satisfied")

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Housing</u>	<u>Neighborhood</u>	<u>Housing</u>	<u>Neighborhood</u>
<u>All</u>	71.3	82.2	86.1	85.2
Renters	66.4**	81.0	82.9	95.3
Owners	82.2	85.0	87.4	80.1
<u>Formal</u>	70.9	89.0++	73.0+	87.0+
Renters	65.6	88.4	58.5	94.8
Owners	84.5	90.6	93.5	100.0
<u>Informal</u>	70.3	76.4	87.8	82.9
Renters	66.0	74.2	91.4	95.4
Owners	79.0	81.1	86.6	78.6

Note: \*\*Significant difference between owners and renters at the 0.01 level.  
 ++Significant difference between formal and informal sector at the 0.01 level.  
 +Significant difference between formal and informal sector at the 0.05 level.

Source: Weighted occupant survey.

fied with their dwellings (29 percent not satisfied); in Beni Suef, 86 percent of households are satisfied with their dwellings. With regard to neighborhoods, Cairo and Beni Suef residents hold similar opinions, with 82 and 85 percent respectively claiming to be satisfied.

Most people that are satisfied with their housing are also satisfied with their neighborhood. In Cairo, 64 percent of families are satisfied with both housing and neighborhood, 25 percent with one or the other and 11 percent with neither. In Beni Suef, 76 percent of families are satisfied with both, 19 percent with one or the other, and 5 percent with neither.

Satisfaction is not uniform among groups. In Cairo, renters are significantly less satisfied with their dwellings than owners, but satisfaction with neighborhoods is about the same in the two groups. On the other hand, there is no difference between formal and informal sector households in terms of housing satisfaction. In light of similarities in objective features of Cairo formal and informal housing noted in Sections 7.3 and 7.4, this is not particularly surprising. Formal and informal households in Cairo hold significantly different opinions of their neighborhoods, however, with informal households less likely to be satisfied. Again, this is consistent with observed differences in objective features of neighborhoods. Within each sector, owners are more satisfied with both housing and neighborhood than are renters.

In Beni Suef, by contrast, there is no significant difference overall between renters' and owners' satisfaction; owners are slightly better satisfied with housing; renters, better satisfied with neighborhoods. Formal and informal sector households differ in their sources of satisfaction; formal households are less likely than informal households to be satisfied with housing, but the reverse is true for neighborhoods.

#### Sources of Satisfaction and Dissatisfaction

Households were asked to list the three most important features of dwelling units and neighborhoods which they liked and did not like. Tables 7-12 and 7-13 present the distribution of all responses regarding dwelling unit satisfaction; table entries represent the percentage of all responses (either first, second, or third choice) falling into a given response area.



Table 7-12

**Sources of Satisfaction and Dissatisfaction With Housing -- Owners and Renters**  
**(Percent of Total Responses)**

	<u>"Like About Dwelling"</u>			
	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Sufficient number of rooms	20*	16*	18	20
Healthy dwelling	14	14	11	16
Social environment	15	11	20	22*
Quiet/clean neighborhood	7	9	1	7
Cheap rent	2	15	0	13
Close to transportation	9	13	3	4
Close to schools	4	6	3	6
Close to workplace	4	9	3	5
Close to family/friends	7	5	11	5
Ownership	16	0	29*	0
Other	2	1	0	2

	<u>"Don't Like About Dwelling"</u>			
	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Insufficient number of rooms	27*	31*	26*	28*
Unhealthy dwelling	11	20	20	17
Inappropriate social environment	9	5	0	9
Noisy/unclean neighborhood	22	18	4	7
Expensive rent	0	4	0	5
Far from transportation	7	3	17	7
Far from schools	5	1	16	2
Far from workplace	7	5	7	9
Far from family/friends	7	6	3	16
Other	12	6	7	2

\*Most important reason

Source: Weighted occupant survey.

Table 7-13

Sources of Satisfaction and Dissatisfaction With Housing --  
Households in Formal and Informal Housing  
(Percent of Total Responses)

"Like About Dwelling"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Sufficient number of rooms	15*	18*	17	20
Healthy dwelling	15	13	8	13
Social environment	10	14	17	21
Quiet/clean neighborhood	9	8	3	3
Cheap rent	13	9	7	4
Close to transportation	13	12	10	2
Close ot schools	6	5	14*	3
Close to workplace	9	7	1	4
Close to family/friends	5	6	14*	8
Ownership	4	7	8	22*
Other	2	1	0	1

"Don't Like About Dwelling"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Insufficient number of rooms	33*	28*	30*	26*
Unhealthy dwelling	20	17	26	18
Inappropriate social environment	7	6	15	3
Noisy/unclean neighborhood	20	17	11	2
Expensive rent	1	4	0	2
Far from transportation	2	5	0	16
Far from schools	2	2	0	13
Far from workplace	5	6	0	8
Far from family/friends	2	8	15*	6
Other	8	6	4	6

\*Most important reason

Sample: Weighted occupant survey.

Patterns of likes and dislikes concerning housing are similar for owners and renters and for households in formal and informal housing in both sites. Concern with adequate interior space is reflected in the fact that "insufficient number of rooms" was the major dislike of each group in each site, while "sufficient number of rooms" was the major positive dwelling feature for every group of Cairo households and was often cited by each Beni Suef subgroup. Ownership per se is highly valued among owners, being cited most often as a preferred feature in Beni Suef and second in Cairo. The social environment of the neighborhood, while strictly speaking a neighborhood rather than a dwelling feature, is also ranked high among positive features for all groups. Another preferred feature is a "healthy" dwelling, often cited in each city; correspondingly, an "unhealthy" dwelling is often cited as a disagreeable characteristic in each city. Differences in centrality and access between formal and informal households in Beni Suef are apparent with the former more likely to cite proximity to schools, transportation, and family and friends as positive features; the latter more likely to cite distance from schools and transportation as negative features.

When households were asked if they thought their dwelling needed changes or modifications, a minority in each city responded affirmatively; 26 percent of owners in both Cairo and Beni Suef, and 17 and 6 percent of renters in Cairo and Beni Suef respectively thought changes were needed. Features thought deserving of change were highly dispersed in each city; "adding one or more rooms" was the most often cited response.

Sources of satisfaction and dissatisfaction concerning neighborhoods are similar among different renter and owner household groups but somewhat different among formal and informal households. As indicated in Table 7-14 the "social environment" of the neighborhood is cited most often by all renter and owner groups as the neighborhood feature they like. In Cairo, renters are just as likely to cite "adequate transport," however. In Cairo, "stores and shops" are next most often cited by both renters and owners, followed by "adequate transport" for owners and "healthy area" for renters. In Beni Suef, "healthy area" follows social environment for both renters and owners.

Among the principal dislikes of all renter and owner groups are the related problems of "garbage in the streets" and "flies and insects" which together comprise from 31 percent to 41 percent of all responses concerning disagreeable neighborhood features. These problems are followed, in Cairo,

Table 7-14

Sources of Satisfaction and Dissatisfaction With  
Neighborhood -- Owners and Renters  
(Percent of Total Responses)

"Like About Neighborhood"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Healthy area	13	15	22	24
Social environment	23*	19*	33*	27*
Quiet and clean	13	11	8	17
Adequate transportation	14	19*	10	9
Schools	11	11	10*	9
Stores and shops	17	16	11	11
Health services	5	5	1	1
Other	5	4	6	1

"Don't Like About Neighborhood"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Garbage in streets	19*	25*	10	20
Garbage in canals/ditches	3	1	7	4
Rats	3	3	6	1
Flies and insects	16	19	21*	21*
Overflowing sewers	12	12	1	5
Air pollution	3	3	0	0
Lack of pure water	5	4	11	0
Lack of sewers	4	2	12	12
Lack of adequate health facilities	4	4	11	10
Lack of electricity	1	1	3	0
Lack of adequate transportation	5	2	6	5
Lack of schools	3	2	5	1
Lots of power outages	7	5	5	7
Water pressure problems	5	5	1	8
Lots of workshops/noise	6	7	1	1
Inappropriate social environment	1	3		3
Other	3	2	1	2

\*Most important reason

Sample: Weighted occupant survey.

by "overflowing sewers" and, in Beni Suef, by lack of infrastructure such as pure water, sewerage, and transport systems. In Cairo, where levels of infrastructure provision are higher than in Beni Suef, lack of infrastructure is not often cited. Indeed, "power outages" and "lots of workshops/noise" are each more often cited by renters and owners than either lack of pure water or sewer systems.

Among formal and informal households (Table 7-15), differences in patterns of dwelling and neighborhood satisfaction tend to follow differences in objective features of households' dwellings and neighborhoods. In Cairo patterns of likes and dislikes of dwelling unit features were nearly identical for formal and informal households, paralleling objective dwelling unit similarities. Concerning neighborhood features, informal households are modestly more likely than formal households to cite shortfalls in sewer, water, schools, and health facilities--in each case consistent with observed objective differences. In Beni Suef the comparative shortfalls in utilities and other infrastructure among informal households are also reflected in a higher incidence of perceived subjective shortfalls in those areas by informal households.

Overall satisfaction was examined using a multivariate analysis in an attempt to quantify the comparative importance of dwelling and neighborhood features. Logit regressions were estimated with dwelling unit and neighborhood satisfaction as dependent variables and with dwelling and neighborhood features as explanatory variables. Results of these analyses are presented in Table 7-16. In both cities the number of persons per room is the most important determinant of housing satisfaction. In Cairo, the probability that a family is satisfied with its housing declines by ten percentage points for each additional person per room. In Beni Suef, the probability declines by two percentage points for each additional person per room. As was noted above, Cairo owners are more likely to be satisfied with their housing than Cairo renters; even after controlling for differences in renters' and owners' housing and neighborhood outcomes, the difference in the probability of satisfaction is approximately 21 percentage points. Thus, ownership per se appears to be a significant source of satisfaction in Cairo. In Beni Suef, however, this does not appear to be the case. On the other hand, in Beni Suef residents of informal housing, who are far more likely than formal households to be owners, are approximately 12 percentage points more likely to be satisfied with their housing.

Table 7-15

Sources of Satisfaction and Dissatisfaction With Neighborhood --  
Households in Formal and Informal Housing  
(Percent of Total Responses)

"Like About Neighborhood"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Healthy area	14	12	4	27
Social environment	18	22*	25	32*
Quiet and clean	10	12	3	13
Adequate transportation	21*	16	19	8
Schools	11	11	21	7
Stores and shops	17	16	26*	8
Health services	5	5	1	1
Other	4	6	0	5

"Don't Like About Neighborhood"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Garbage in streets	21*	25*	31*	9
Garbage in canals/ditches	2	2	0	7
Rats	3	3	0	5
Flies and insects	21*	16	27	20*
Overflowing sewers	13	11	4	2
Air pollution	3	2	0	0
Lack of pure water	2	6	0	0
Lack of sewers	2	3	15	13
Lack of adequate health facilities	3	4	0	10
Lack of electricity	1	1	2	2
Lack of adequate transportation	2	4	2	7
Lack of schools	1	3	8	4
Lots of power outages	6	6	4	5
Water pressure problems	6	4	0	2
Lots of workshops/noise	9	5	6	2
Inappropriate social environment	2	3	0	1
Other	3	2	0	1

\*Most important reason

Sample: Weighted occupant survey.

Table 7-16

Logit Model of Housing and Neighborhood Satisfaction  
(Regression Coefficients; Standard Errors in Parentheses)

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Housing</u>	<u>Neighborhood</u>	<u>Housing</u>	<u>Neighborhood</u>
Intercept	1.179** (.430)	1.610** (.316)	.834 (.737)	-2.062** (.620)
Owner	1.044** (.283)	.515 (.333)		
Informal	--	-.832** (.294)	1.000+ (.557)	
Persons Per Room	-.460** (.102)		-.182 (.122)	
Kitchen	.677* (.313)			
Public Water Connection	.470 (.313)			
Electricity Connection			.789+ (.451)	
Public Sewers				3.900** (1.099)
Schools				2.118** (.471)
Garbage Accumulation	-.740** (.248)	-1.090** (.285)		
Stagnant Water Accumulation	-.491* (.245)			
Housing Satisfaction	--	1.490** (.278)		1.913** (.500)

Note: \*\*Significant at the .01 level.

\*Significant at the .05 level.

It is likely that problems of collinearity between formality and ownership have obscured the "true" relationship between ownership and satisfaction in Beni Suef, and that in fact ownership per se is also highly valued in Beni Suef. In Cairo, informal housing status per se does not affect housing satisfaction.

In Cairo, families who have a kitchen and public water connection in the building or the unit are more likely to be satisfied with their housing than families who do not. In Beni Suef, where electricity is not universally available, families with electricity are 36 percentage points more likely to be satisfied with their housing than families without electricity.

In Section 7.4 it was noted that environmental problems are common in Cairo. Analysis indicates that above average accumulations of garbage and stagnant water on the street result in significantly lower levels of housing satisfaction. The depressing effects of these environmental problems on housing satisfaction are approximately of the same magnitude as not having a kitchen or water in the building.

It was noted above that there is a high correlation between housing and neighborhood satisfaction. Therefore, housing satisfaction was included in the logit equation for neighborhood satisfaction. After controlling for this correlation, the logit estimates imply that, in Cairo, informal housing status reduces the probability of the neighborhood satisfaction by 12 percentage points (in Beni Suef informal housing status does not affect neighborhood satisfaction beyond its effect on housing satisfaction). The likelihood that Cairo families who are satisfied with their housing will also be satisfied with their neighborhood is reduced by 7.5 percentage points by accumulation of stagnant water.

In Beni Suef, availability of public sewer connections and access to schools increase the likelihood of neighborhood satisfaction.

It should be noted that the specification of the logit equation used here makes it somewhat arbitrary to allocate effects between housing and neighborhood satisfaction. It might be more appropriate to conclude that the housing and neighborhood characteristics discussed above affect both housing and neighborhood satisfaction. Thus, one may conclude that in Cairo crowding, environmental problems and informal housing status are negative determinants of satisfaction. Homeownership, availability of



kitchen and water connection are positive determinants. In Beni Suef, informal housing status (or possibly homeownership), electricity, public sewers and schools are positive determinants of satisfaction. Crowding is a negative determinant.

#### Perceptions of Recent Neighborhood Changes

Households in both Cairo and Beni Suef are more likely than not to perceive that neighborhood conditions have remained stable or improved in the recent past. In Cairo approximately 45 percent of owners and 34 percent of renters thought that neighborhood conditions had improved in the recent past, while 15 and 19 percent respectively thought that conditions had declined. In Beni Suef, households perceived even more favorable changes; 53 and 60 percent of owners and renters respectively perceived there to have been recent neighborhood improvements while only one household of 250 interviewed perceived any neighborhood decline.

Sources of perceived improvements, which are shown in Tables 7-17 and 7-18 mirror the changes in infrastructure noted in Chapter 3. In Cairo significant fractions of households cite sewer, water, and electricity connections; slightly lower fractions cite street paving, schools, shops, and transport improvements. In Beni Suef substantial improvements in electricity and pure water connection are noted and street paving appears to have occurred in many renters' neighborhoods. Other neighborhood improvements such as those cited in Cairo (schools, shops, and transport) appear to have been extremely limited in Beni Suef. Despite having been cited as disagreeable aspects of neighborhoods, street cleaning, garbage removal, and control of flies and insects are almost never cited as areas of recent improvement in either city. Indeed, in Cairo, substantial fractions of households perceive that neighborhood conditions have recently worsened with regard to garbage, dirty streets, and flies and insects. Other problem areas included overflowing sewers, water outages and low pressure, and power outages--evidently reflecting the tenuous upkeep of some public utilities in Cairo. Interestingly, these are not cited as problems in Beni Suef--probably reflecting a better level of maintenance and/or better comparative peak load capacity of systems that do exist in Beni Suef.

Table 7-17

Perceptions of Recent Neighborhood Changes  
(Percent of Total Responses)

	"Improvements"			
	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Streets paved	10	8	8	18
Electricity connected	15	15*	36*	25*
Pure water connected	14	9	27	18
Sewers connected	16*	12	5	3
Schools put in	8	10	4	6
Health facilities put in	3	7	5	6
Transport improved	8	10	5	0
Shops moved in	8	12	4	3
Control of flies/insects	1	1	0	0
Streets cleaned/garbage removed	2	4	1	6
Prevention of overflowing sewers	3	2	2	4
Rising social class	5	5	3	6
Other	6	5	1	0

	"Declines"			
	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Garbage/dirty streets	26*	28*		
Overflowing sewers	16	13	n/a**	n/a**
Flies/insects	15	15		
Mud in streets	12	8		
Water outages/low pressure	5	8		
Power outages	9	11		
Workshops/noise	7	6		
Air pollution	1	1		
Drop in social class	6	6		
Other	4	3		

\*Most important reason

\*\*Fewer than 5 cases

Sample: Weighted occupant survey.

Table 7-18

Perceptions of Recent Neighborhood Changes --  
Households in Formal and Informal Housing  
(Percent of Total Responses)

	<u>"Improvements"</u>			
	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Street paved	17*	8	13	11
Electricity connected	9	12	21*	35*
Pure water connected	5	15	21*	26
Sewers connected	3	21*	17	3
Schools put in	9	7	4	4
Health facilities put in	7	5	8	3
Transport improved	15	7	4	5
Shops moved in	11	11	8	3
Control of flies/insects	1	1	0	0
Streets cleaned/garbage removed	3	3	0	3
Prevention of overflowing sewers	2	2	4	2
Rising social class	7	4	0	4
Other	10	4	0	0

	<u>"Declines"</u>			
	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Garbage/dirty streets	30*	25*		
Overflowing sewers	15	13	n/a**	n/a**
Flies and insects	15	13		
Mud in streets	11	8		
Water outages/low pressure	9	7		
Power outages	8	13		
Workshops/noise	6	6		
Air pollution	0	2		
Drop in social class	4	9		
Other	3	3		

\*Most important reason

\*\*Fewer than 5 cases

Sample: Weighted occupant survey.

Comparisons of informal and formal households suggest that recent neighborhood improvements have been more substantial in informal than in formal areas. For example, while 25 percent of formal owners in Cairo perceive that neighborhood conditions have improved recently, 53 percent of informal owners perceive recent improvements. Among formal households, improvements were most often noted in street paving, transportation, and electricity connections; while among informal owners, improvements were most often noted in sewer, water, and electricity connections. In Beni Suef, improvements in electricity and water connections are also more often cited by informal than formal households; sewer connections and installation of health facilities are more often cited by formal households.

#### Willingness to Pay for Neighborhood Changes

Despite recent improvements in neighborhood conditions, many households perceive continuing shortfalls, for many of which they express a willingness to pay to overcome. Households were asked "What improvements in the area should be done?," and "Would you be prepared to participate in paying for them?" Households were asked to list the three improvements they considered most important. Tables 7-19 and 7-20 tabulate the percentage of all responses (first, second, or third choice) for each of a number of improvement areas, including the response "nothing needs to be done."<sup>1</sup>

Few households responded that "nothing needs to be done"--only about five percent of both Cairo and Beni Suef respondents. Among those expressing a willingness to pay for neighborhood improvements, regular street cleaning was for every group the most often cited improvement needed. In Cairo, the next most often cited improvements needed were (in order) street paving, regular garbage collection, water connections to the area, street repair, and eradicating flies and insects. In Beni Suef, improvements needed (following street cleaning) were regular garbage collection, sewer connections, and eradicating flies and insects (the three of which were tied in importance), followed by water connections to the area and paved streets. Social infrastructure such as health care, day care,

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<sup>1</sup>Survey responses were coded to indicate when a household indicated a given improvement and whether or not the household indicated a willingness to pay. Few households indicated that improvements were necessary without indicating willingness to pay. Thus, these responses are not presented here.

Table 7-19

Neighborhood Improvements for Which Households Express A Willingness to Pay  
(Percent of Total Responses)

	Cairo		Beni Suef	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Nothing needs to be done	4	6	1	14
Water connections to area	9	8	7	4
Electrical connections to area	1	1	3	0
Sewer connections to area	7	4	12	10
Paved streets	13	19	6	4
Street repair	7	8	8	9
Regular street cleaning	17*	24*	19*	21*
Regular garbage collection	11	12	10	13
Health care center	2	2	5	1
Day care center	1	1	1	1
Public schools	4	3	3	2
Sufficient transport	2	2	2	3
Sufficient shopping	2	1	3	3
Church/mosque	3	1	2	0
Eradicate rats	2	1	3	2
Eradicate flies/insects	11	4	11	11
Other	3	4	2	1

\*Most important reason

Sample: Weighted occupant survey.

Table 7-20

Neighborhood Improvements for Which Households Express A  
Willingness to Pay -- Households in Formal and Informal Housing  
(Percent of Total Responses)

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Nothing needs to be done	6	3	2	6
Water connections to area	3	10	0	7
Electrical connections to area	2	1	0	2
Sewer connections to area	5	5	0	13
Paved streets	12	16	8	5
Street repair	4	7	15	7
Regular street cleaning	21*	19*	29*	18*
Regular garbage collection	17	10	17	10
Health care center	3	2	2	5
Day care center	1	2	0	1
Public schools	2	4	2	2
Sufficient transport	1	2	2	3
Sufficient shopping	2	2	0	4
Church/mosque	1	2	0	2
Eradicate rats	2	1	2	3
Eradicate flies/insects	13	12	17	8
Other	5	3	0	2

\*Most important reason

Sample: Weighted occupant survey.

schools, mosques or churches, and shopping facilities were not often mentioned by any group as requiring improvement (regardless of willingness to pay).

Comparisons of formal and informal households in Cairo indicate that a greater proportion of the former believe that nothing needs to be done in their areas. Formal households emphasize regular street cleaning, regular garbage collection, eradication of flies and insects, and paved streets in that order. Among informal households willingness to pay for improvements was highly similar to that among formal households. Regular street cleaning, paved streets, eradication of flies and insects, and (tied) paved streets and water connections in that order are emphasized by Cairo informal households. In Beni Suef, as is consistent with objective differences in formal and informal neighborhood features, informal households tend more often to cite a willingness to pay for basic infrastructure improvements. As in Cairo, however, both formal and informal households most often cite a willingness to pay for services such as regular street cleaning and garbage collection.

One interesting aspect of these responses is the degree to which households emphasize urban services such as street cleaning and garbage collection relative to provision of basic utilities. While the data have not been disaggregated by geographic area, one has a sense that perceived shortfalls in urban services are geographically widespread, whereas perceived shortfalls in basic infrastructure supply are geographically concentrated. In terms of satisfying the preferences of households, it appears that a considerable amount can be done by upgrading services, especially since many households indicate a willingness to pay for such improvements.

#### 7.6 Preferences For Public Versus Private Housing

Households were asked if they would prefer public or private housing and for their reasons. There was a general preference for public over private housing among all groups with renters in each city more strongly in favor of living in public housing than owners. In Cairo, 60 percent of renters and 51 percent of owners expressed a preference for public housing; in Beni Suef, 75 percent of renters and 47 percent of owners preferred public housing. In each case, the remaining households

were divided between those preferring private housing (from 23 to 80 percent of remaining households) and those who were undecided or gave no response.

Reasons given for preferring public housing were dominated by the perception that public housing is cheaper than private housing rather than by any particular features of public housing per se. Of all households preferring public housing, 63 percent preferred it because of its comparative cost. Other responses were highly diverse.

As in the case of the perceptions and attitudes discussed in the previous sections, perceptions regarding public and private housing accord well with objective differences. Housing costs do indeed appear to be lower in public housing. In Cairo, for example, median rents were LE 5.50 per month in private housing but only LE 1.75 per month in public housing. Moreover, the incidence of key money among public housing tenants was only half that of private tenants (11 percent versus 22 percent); even when key money was paid, median amounts were smaller for public tenants (LE 16 versus LE 200). Also, public housing tenants appear to have been obliged to spend less money on repairs and renovations of their dwellings (21 percent of public tenants in Cairo and 50 percent of private tenants claimed to have spent money on repairs and renovations during the past year).

Despite these unambiguous cost benefits of living in public housing, there are nevertheless tradeoffs involved. For example, public housing dwellings appear to be smaller on average than private dwellings (a median of 2.3 rooms for the former versus 2.6 for the latter). Not only are units smaller, but they are more densely occupied--a median of 2.33 persons per room versus 1.67 for private housing. Garbage collection services appear to be worse on average around public housing units than private units with more than half of sampled public units in areas with "a lot" of garbage within 20 meters of the building.

In other respects, public housing tends to dominate private housing in terms of both dwelling and neighborhood characteristics. Public as compared to private units are more likely to have private toilets, kitchens, private water connections, public sewage, and be located in buildings in "good" condition (despite the fact that sampled public units are, on average, in older buildings than sampled private



units). Public units are also more likely to be in neighborhoods with street lights, paved roads, sidewalks, curbs, and good landscaping. All of these advantages are not lost on public housing tenants, 92 percent of whom claim to be satisfied with their neighborhoods (compared to 80 percent of private tenants) and 80 percent of whom<sup>1</sup> claim to be satisfied with their dwelling units (compared to 65 percent of private tenants).

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<sup>1</sup>This figure would almost certainly be higher were it not for the degree of crowding present in public housing units.

## CHAPTER 8

### Housing Costs and Finances

Housing costs in Egypt have been rising rapidly, creating an increasing problem for those who wish to enter the housing market for the first time or who wish to change residences. At the same time, however, costs for the majority of households have remained stable for long periods, the result of a stringent rent control law. This chapter explores major housing cost elements, recent changes in their magnitude, and reasons behind those changes. Income and the ability to pay for housing is analyzed, particularly with reference to homeownership. Rental housing expenditures are analyzed in relation to household income, size, and other variables.

#### 8.1 The Dynamics of Housing Costs

Owners and renters of housing face different types of housing costs. Households that are already established in dwelling units, moreover, face different costs than those who are considering entering the market for the first time or moving from one residence to another.

Those who wish to become owners face a decision to either purchase an existing unit or build. As indicated in Chapter 7, formal sector households are more likely to purchase an existing dwelling, while informal sector households are more likely to build. For the former group, the relevant cost they confront is that of a completed dwelling, which depends considerably on the price level established by the marketplace and may be only tenuously related to current costs of housing inputs such as land, labor, and materials. For the latter group, the price of finished housing is irrelevant; what matters is the prices of inputs to the production process.

For renters who are just entering the market or moving, the relevant costs they confront are those of the contract rent for a unit, which because of rent control may be below both the free-market level and the level necessary to provide landlords with a competitive rate of return, and a lump sum "key money" payment which is required to gain the occupancy right to a unit. Key money, while illegal, is widespread. Key money provides a mechanism for equilibrating rates of return for landlords or

builders considering whether to sell or lease a unit. Because of the widespread usage of key money, housing input costs (land, labor, and materials) may be expected to be of relevance to renters as well as purchasers of housing. That is, as the costs of producing a unit for either rent or sale increase, producers of housing will be expected to raise both the asking price for a sale, and asking amounts for key money for a lease.

Households not considering moving are largely immune from changes in housing input prices. Owners, most of whom own outright their dwellings, confront only utility costs, which are slow in changing, and maintenance costs. Renters confront a fixed rent-controlled payment of contract rent, utilities, and maintenance costs.

Within recent years, movements of housing costs for households that have not moved have lagged well behind general prices. For example, between 1974 and 1979 the CAPMAS "urban housing cost index," which is dominated by rents of existing units, changed at a compound rate of only 1.1 percent per year. During the same period, the CAPMAS "urban cost of living index" changed at a compound rate of 10.7 percent per year and the wholesale price index changed at an annual rate of 9.8 percent.<sup>1</sup> Thus, over the recent several years, the real cost of housing for most of the population has fallen--the result of a far slower rate of increase in costs than of other household goods.

For households just entering the market, however, the situation has been radically different. For example, two construction cost indices (one constructed by the Ministry of Planning and one by the Ministry of Housing) reported in a recent World Bank/GOHBPR study of the construction industry that construction costs increased at annual rates of between 13 and 14 percent between 1965 and 1979 (GOHBPR, Appendix A-13), but at rates of from 19 to 23 percent between 1975 and 1979, well outstripping general rates of inflation.

Table 8-1 indicates how overall construction costs and the costs of major components are "officially" estimated to have changed between 1965 and 1979. As the table indicates, labor and materials costs increased

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<sup>1</sup>The "rural cost of living index" also changed at a rate of 10.7 percent annually.

Table 8-1

Construction Costs and Cost Components, 1965-1979  
(Annual Rates of Increase)

<u>Period</u>	<u>Overall Construction Costs</u>		<u>Building Materials</u>			<u>Labor</u>		
	<u>MOH<sup>1</sup></u>	<u>MOP<sup>2</sup></u>	<u>Cement</u>	<u>Steel</u>	<u>Bricks</u>	<u>Skilled</u>	<u>Semi-Skilled</u>	<u>Unskilled</u>
1965-1970	4.2	5.3	3.1	2.7	3.9	9.9	5.6	7.3
1971-1975	16.4	16.5	11.4	13.4	13.4	18.2	18.6	17.0
1975-1979	23.0	19.2	23.7	14.0	14.0	12.9	15.8	18.9
1965-1979	13.7	13.1	11.6	9.6	9.6	13.7	13.0	14.0

Source: General Organization for Housing, Building, and Planning Research, Construction Industry Study, Appendix 13, "Studies on Costs," Cairo, 1981.

Notes: <sup>1</sup>Ministry of Housing.

<sup>2</sup>Ministry of Planning.

slowly before 1970 resulting in overall rates of increase of from 4 to 5 percent annually. After 1970, and particularly after 1973, costs of both labor and materials began to increase rapidly, causing the rate of increase of overall construction costs to more than triple from pre-1970 levels. Cost increases during the 1970 to 1975 period were led by labor cost increases, which averaged more than 17 percent annually for all types of labor. Between 1975 and 1979 labor cost increases for skilled and semi-skilled workers appear to have begun to moderate slightly, although because labor costs may represent from only 10 to 30 percent of total construction costs, overall construction costs continued to rise even more rapidly than during the previous period.

Reasons advanced for these rapid increases include changes in world materials prices, the high demand for Egyptian construction labor abroad (particularly in Libya, Saudi Arabia, and the Gulf States), and a rapid expansion in demand for construction.

These changes in "official" construction costs were generally supported by in-depth interviews with supply-side participants. In those interviews respondents were asked to recollect changes in building costs since 1971. Typical free-market time series are given in Table 8-2. Interview data indicated recent annual rates of construction cost increase of from 19 to 23 percent--identical to those indicated in "official" series. Interview data also supported the official observation that cement prices have been rising more rapidly than prices of steel reinforcement bars.

Interviews indicated that minor short-term fluctuations in prices occurred, depending on the availability of substitute materials such as cement and re-bars. Thus spot prices in the free market could be higher than the "typical" prices indicated in the table. Legislators, government officials, and some contractors who were interviewed suggested that private sector hoarding of materials was occurring. Interviews and observations of distributors suggested that while some of the larger distributors have small storage facilities which could have been used to hold materials for speculation, almost none of the small-scale distributors operating in the informal sector had any significant storage space.

Land prices are another increasingly important component of housing costs. Interviewers indicated that recent land price increases had been dramatic and ubiquitous. Interviewees suggested that land prices

Table 8-2

Estimated "Free Market" Construction Cost Changes

<u>Year</u>	<u>Construction Cost, Average Housing (LE/m<sup>2</sup>)</u>	<u>Portland Cement (LE/ton)</u>	<u>Re-Bars (LE/ton)</u>	<u>Wood (LE/m<sup>3</sup>)</u>
1971	10- 12	13	80	--
1978	40- 60	36	250	145
1981	70-100	70	300-310	250
<u>Compound Rate of Change</u>				
1971-1981	22.7	18.3	14.5	--
1978-1981	19.3	24.8	6.9	19.9

in selected areas of Cairo and Beni Suef had changed as indicated in Table 8-3. As the table suggests, unit prices of land have been changing at rates from 25 to above 40 percent annually--even more rapidly than construction costs, and far more rapidly than general prices. It should be noted that areas for which land price changes are reported in Table 8-2 are primarily informal housing areas; price rises in formal areas have been at least as large.

Price levels for land in Greater Cairo were investigated based on owners' estimates of what land similar to their own would sell for in 1981. Among all owners, the median estimated sales price was LE 70/m<sup>2</sup> with 50 percent of estimates in the range LE 56.25 to LE 100.<sup>1</sup> Formal owners estimated higher land prices, a median of LE 89/m<sup>2</sup>, than did informal owners, a median of LE 66/m<sup>2</sup>. Estimated land sales prices of individual owners were regressed on the following variables:

1. Lot connected to water (1 if connected; 0, otherwise);
2. Lot connected to public sewer (1 if connected; 0, otherwise);
3. Lot connected to electricity (1 if connected; 0, otherwise);
4. Informal unit (1 if connected; 0 otherwise);
5. Area has access to public transportation (1 if area has access; 0, otherwise);
6. Number of community facilities such as mosques, schools, nurseries, etc. (Index from 0 to 10);
7. Lot designated as a building lot (1 if "building lot"; 0, otherwise);
8. Area density (Index from 1--"very crowded" to 4--"uncrowded");
9. Area classified as "middle" or "upper class" (1 if area so classified; 0, otherwise);
10. Area classified as "popular" or "historic" (1 if area so classified; 0, otherwise);
11. Average street width on main streets (square meters);
12. Area primarily agricultural land (1 if area so classified; 0, otherwise);
13. Area primarily desert land (1 if area so classified; 0, otherwise);
14. Area partitioned by the government (1 if area so classified; 0, otherwise);
15. Area partitioned by private sector or cooperatives (1 if area so classified; 0, otherwise);

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<sup>1</sup>In Beni Suef, the median was LE 17.5/m<sup>2</sup> with 50 percent of estimates in the range LE 6 to LE 50. The Beni Suef mean estimate was LE 28/m<sup>2</sup>.

Table 8-3

Recent Changes in Land Prices  
(LE/m<sup>2</sup>)

<u>Year</u>	<u>Cairo</u>			<u>Beni Suef</u>
	<u>Mit Oqba</u>	<u>Dar as-Salaam</u>	<u>Basatin</u>	<u>Beni Suef City</u>
1963	--	1.50	--	2.00
1968	4-5	4-5	1.50	3.50
1975	30-35	25	35-45	15-29
1980	80	60-150	80-150	80-100
 <u>Compound Rate of Change (Percent)</u>				
1968-1980	28.4	25.3-32.8	39.3-46.8	29.8-32.2



16. Growth rate, 1976-1981 (Percentage change in housing stock);
17. Lot on graded road (1 if yes; 0, otherwise);
18. Lot on paved road (1 if yes; 0, otherwise);
19. Lot on less than 3 m. road (1 if yes; 0, otherwise);
20. Lot on greater than 8 m. road (1 if yes; 0, otherwise).

Results of the estimated regression equation are given in Table 8-4. Given the small number of observations and intercorrelation of variables, results should be interpreted cautiously.<sup>1</sup> The estimated equation indicates that land value is positively related at high levels of significance to (1) whether or not land was designated as a building lot, (2) location in a middle- to upper-class area, (3) on government partitioned land, (4) on private or cooperatively partitioned land, and (5) with graded road frontage. Land value is negatively related to (1) location in an agricultural area, (2) location in a desert area, (3) growth rate, (4) average road width, and (5) frontage on a road greater than 8 m. in width. Most of these variables negatively related to land value are in some way measures of access and centrality. For example, wide average road widths and presence of 8 m. and larger roads are often associated with locations on the periphery of Greater Cairo. The negative association with an area's growth rate is probably indicative of the reverse causation from that indicated in the estimated equation; e.g., that growth is more rapid in areas with lower land prices. Land values appear to be largely unrelated to whether or not a lot is occupied by an informal sector household, presence of infrastructure connections, public transportation, and community facilities once other variables are accounted for.

The estimated coefficients in the land value equation suggest that land prices are highly variable and are much lower in peripheral agricultural or desert areas. Thus, households which are sensitive to cost will be inclined to seek out land in peripheral, especially agricultural, areas. At the same time, land price increases may be expected to lead to increased density on urban lots. Indeed, it appears that average lot sizes have been getting smaller in Cairo for some time. For example, the average lot size among households in buildings built between 1961 and 1970 was estimated to

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<sup>1</sup>Further investigation of such land value relationships is strongly recommended as they can be especially revealing of household willingness to pay for specific utilities and services in land development and sites and services projects.

Table 8-4

Determinants of Land Value in Cairo--Regression Coefficients

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
Intercept	35.50	
Water connection	-13.52	16.57
Sewer connection	7.63	31.22
Electricity connection	37.99	30.15
Informal	7.44	15.90
Public transportation	19.57	16.53
Community facilities	6.24	4.47
Building lot	19.29+	10.99
Area density	10.45	9.55
Middle-upper class area	137.29**	35.70
Popular/historic area	-22.52	21.59
Street width (m <sup>2</sup> )	- .03**	.01
Agricultural area	-71.56**	24.45
Desert area	-149.55**	37.33
Government partition	70.21**	21.24
Private/coop partition	38.91*	19.68
Growth rate	-26.78+	15.11
Graded road	21.50+	11.48
Paved road	-16.09	24.12
Less than 3 m. road	- .40	18.62
Greater than 8 m road	-30.20+	18.13
R <sup>2</sup>	.77	
N	62	

Notes: \*\*Significant at the .01 level.  
 \*Significant at the .05 level.  
 +Significant at the .10 level.

be 120 m<sup>2</sup>; in buildings built between 1971 and 1976, 100 m<sup>2</sup>; and in buildings built after 1976, 90 m<sup>2</sup>--a decrease of 25 percent over a 15-year period.

Notwithstanding the tendency to reduce the amount of land associated with new residential buildings, land costs as a share of total housing costs have almost certainly risen rapidly over time. In 1981, for example, an informal "popular" dwelling of 50 m<sup>2</sup> was estimated to have a construction cost of about LE 2000. Were that dwelling to be situated on a median size informal lot of 88 m<sup>2</sup>, the cost of the lot evaluated at the median land cost of existing informal housing (LE 66/m<sup>2</sup>) would be LE 5808--two and one half times the cost of the structure. Based on recent rates of land and construction cost increases, costs of land and the structure would have been on a par in the mid-1970s. Even with a smaller lot on peripheral land, the share of land in total costs for new units could easily be equal to construction costs now.<sup>1</sup>

Increases in land prices appear to have been heavily affected by repatriations from Egyptians working abroad. Households interviewed in the occupant survey who built on vacant land were asked whether or not any of the money used to purchase their lot came from someone in the family who worked abroad. In Cairo, 35 percent of all formal owners who built on vacant land and 30 percent of all informal owners who built on vacant land answered affirmatively.<sup>2</sup> When the incidence of affirmative answers is examined in relation to the year of purchase, it is apparent that expansion in repatriations as a financing source has paralleled expansions in repatriations themselves.

The incidence of repatriations as a source of financing for land purchases was investigated using a logit analysis which regressed the likelihood of utilizing repatriations as a financial source on the length of time since a purchase was made and a number of demographic variables.<sup>3</sup>

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<sup>1</sup>In Beni Suef, on the other hand, a great deal of land appears to be available in the range LE 6-LE 17.5, suggesting that typical informal lot costs could be as low as LE 300-LE 400.

<sup>2</sup>In Beni Suef, only 13 percent of informal owners answered "yes;" no formal owners so answered.

<sup>3</sup>Variables in the equation included household size; sex, age, education, and occupation of the household head; household income; and whether a household was living in an informal unit.

The estimated relationship indicated that having financed land with repatriations was positively related to age and household size, negatively related to being illiterate, and very strongly negatively related to the time since a purchase was made. For example, the estimated equation suggested that for a typical purchaser of land (age 40, household size 5, not illiterate) that only 4 percent of such households would have used repatriations 20 years ago; 21 percent, 10 years ago; 41 percent 5 years ago; and 64 percent in the current year. Thus, it appears that a majority of all land purchases in Cairo by individuals having built recently or intending to build currently rely in part on repatriations from abroad.

This is not particularly surprising since the estimated rate of increase of repatriations in recent years has been extraordinary--rising from approximately LE 4.5 million per year in 1971, to LE 413.4 in 1977, to more than LE 2500 in 1980.<sup>1</sup> Such windfalls as repatriations are highly unlikely to find their way into banks, if the occupant survey is a guide. Few households in either the formal or informal sectors appeared to rely on banks for either saving or financing purchases of housing. Given the paucity of what are considered to be "safe" investments, it is little wonder that land should be highly prized as an investment and store of value. It seems highly likely that repatriations have been behind much of the rapid expansion in the housing stock discussed in Chapter 2, although unfortunately owner-builders were not specifically asked about the degree to which repatriations were used in financing construction costs.

It should be noted that the rapid rise in land costs is almost certainly related to the rapid increase in vertical rather than horizontal expansion of the housing stock previously noted. Owners of existing properties confronting an investment in real property, are highly rational in opting for vertical expansion rather than land purchase and building; vertical expansion requires only construction costs and provides a return in key money and monthly rent; land purchase and building requires much higher initial capital outlays and runs the risk of finding few takers at prices necessary to cover current land and building costs.

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<sup>1</sup>Early year figures are based on figures from the National Bank of Egypt reported in J.S. Birks and C.A. Sinclair (1978); the 1980 figure is based on the following quote from the October 31, 1980 Middle East Economic Digest, "Remittances from Egyptian workers abroad totalled LE 1280 million in the first six months of 1980 compared with LE 964 million in the corresponding period of 1979." (p. 19).

## 8.2 Income and the Ability to Pay for Housing

Household incomes in Cairo and Beni Suef have not kept pace with recent changes in construction and land costs. Table 8-5 indicates estimated household income and expenditure distributions for Cairo and Beni Suef based on occupant survey data. Results of the table are presented graphically in Figure 8-1. Median reported expenditures are always higher than reported incomes;<sup>1</sup> thus the former are a more reliable indicator of "true" income. Median reported total household expenditures in 1981 were LE 86 per month (LE 1032 per year) in Cairo and LE 64 per month (LE 768 per year) in Beni Suef. By comparison national average annual household expenditure in 1974-1975 was LE 451 (Joint Housing and Community Upgrading Team, 1977). This suggests that household incomes (expenditures) have probably increased no more rapidly than the urban cost of living during the past six to seven years.<sup>2</sup>

This evident parity in income and cost of living increases results in a substantial fraction of households unable to save and feeling in a financially precarious position. For example, in response to a question concerning household income relative to expenses, 29 percent of Cairo households and 53 percent of Beni Suef households responded that they felt "unable to get by (make ends meet) most of the time;" and an additional 60 percent and 37 percent of Cairo and Beni Suef households said that they were "barely able to get by." When asked about approximate savings "in cash, investments, jewelry, etc.," 85 percent of Cairo households and 87 percent of Beni Suef households replied that they had none; an additional 7 and 4

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<sup>1</sup>This does not mean that expenditures are higher than incomes for every household, nor that expenditures are higher than incomes in every income class; neither of these statements is true. What is indicated is that reported incomes are downward biased from "true incomes," which are approximated by reported expenditures, because of a variety of reporting errors.

<sup>2</sup>Were the national figure assumed to apply to Cairo (which it likely understates), Cairo incomes would be estimated to have increased by 13.5 percent annually. Were the national figure assumed to apply to Beni Suef (which it likely overstates), a rate of increase of 8.5 percent would be calculated. Were 1981 figures for Cairo and Beni Suef weighted in rough proportion to Cairo's population weight, letting Beni Suef represent the rest of Egypt (e.g., a 30 percent weight for Cairo and a 70 percent weight for Beni Suef), a rate of increase of 10.2 percent would be estimated--roughly equal to cost of living changes in recent years.

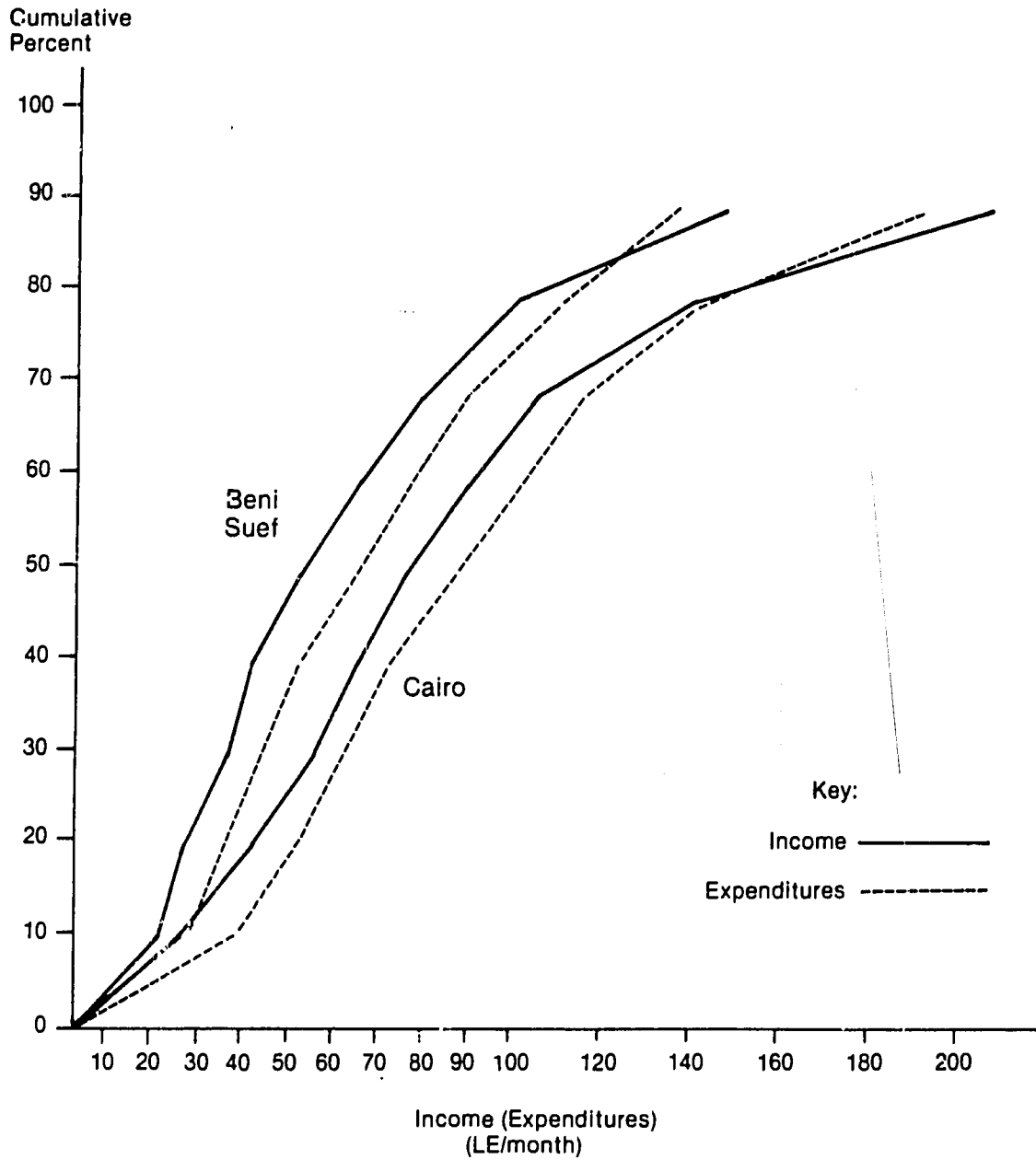
Table 8-5

Household Income and Expenditure Distributions--1981  
(LE/mo)

<u>Decile</u>	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Income</u>	<u>Expenditures</u>	<u>Income</u>	<u>Expenditures</u>
10	24	37	19	26
20	40	50	25	33
30	54	60	34	41
40	64	70	40	50
50	75	86	51	64
60	89	100	64	75
70	105	114	79	89
80	139	140	100	109
90	207	191	146	135
<u>Median for:</u>				
Renters	77	83	82	86
Owners	69	92	40	50

Source: Weighted occupant survey.

**Figure 8-1**  
**Income and Expenditure Distributions in Cairo and Beni Suef**



**Source: Weighted Occupant Survey**

percent respectively claimed to have less than the equivalent of one month's income.

Given the recent level of building activity, it is hard to take these latter interview responses at face value. Households' interpretations of "savings" are likely not to have included savings in the form of land purchased but not yet built on, or partially completed buildings. On the other hand, responses to questions concerning savings are highly consistent with households responses concerning their "ability to get by," and are consistent with the observation that reported expenditures exceed reported incomes in general. These observations tend, therefore, to further reinforce the estimate of the previous section that a large fraction of current land (and probably housing) transactions are financed by comparative wind-falls such as repatriations from abroad.

Further insight into sources of finance is gotten from occupant survey questions concerning sources of funds for land or property purchases or for key money payments. Table 8-6 indicates major sources of funds for housing and land transactions; table entries represent the fraction of all responses (first, second, or third fund sources for a given source). The table indicates the highly informal nature of housing finance in both cities. Reliance on banks for either savings or loans is virtually nil. Less than 10 percent of Cairo purchases relied on either bank loans or savings in banks; only 5 percent of households relied on bank savings for key money payments. In Beni Suef, only 2 percent of households used banks for funds for property purchase; none used banks for land purchase. Aside from inheritance, which as previously noted plays a large role in property acquisition of existing properties, the major informal financing sources are sale of property and jewelry (which together are used in from 28 to 45 percent of property transactions by owners and 15 percent of key money payments); "other savings" and "other," which account for a large share of repatriations financed purchases; and, to a modest degree, savings in "gamiya"--informal credit institutions most often used for minor savings for consumer goods, weddings, etc. Gamiya is the most prevalent source of funds for key money payments, being used in 24 percent of cases. Gifts and loans from family or friends play only a very modest role in housing finance.



Table 8-6

Sources of Funds for Housing and Land Purchases  
(Percent of Total Responses)

	Owners				Renters <sup>1</sup>
	Property Purchase		Land Purchase		Cairo
	Cairo	Beni Suef	Cairo	Beni Suef	
Paid nothing	5	9	8	5	n/a
Savings in gamiya	4	4	7	6	24
Savings in bank	7	1	7		5
Other savings	12	4	11	7	20
Key money refund	1	1		2	
Sale of property	14	11	17	12	13
Sale of jewelry	14	18	16	33	2
Gift from friend/relative	2	2	1	2	1
Inheritance	17	39	11	10	0
Loan from bank	2	1	1	0	0
Loan from family/friends	4	3	5	0	10
Other (includes remittances from abroad)	19	9	15	23	0

Source: Weighted occupant survey

Notes: <sup>1</sup> There were too few Beni Suef renters paying key money to tabulate.

When households in Cairo were asked about whether they had ever gotten money from various sources (for any reason), 27 percent had gotten money from the sale of jewelry; 19 percent from gamiya; 15 percent from sale of property; and 13 percent from a bank or credit union. In Beni Suef, the corresponding figures were 21 percent from jewelry sales; 8 percent from gamiya; 10 percent, from property sales; and 8 percent, from banks or credit unions.

Few households claim to be explicitly saving for housing--only 1 percent of owners in Cairo and Beni Suef and 3 percent of renters in Cairo and Beni Suef.<sup>1</sup> Only modestly larger fractions of Cairo households expect to buy either land or a building within the next five years--4 percent.<sup>2</sup> In Beni Suef only 2 percent expect to buy land or a building within the coming five years.

These gloomy expectations are a reflection of the true housing crisis in Egypt, which is a crisis in the ability of the population to afford to enter the housing market if they are not already in it. Thus despite a significant building boom and widespread expansion of basic utilities, opportunities for entering the housing market as an owner are severely restricted. Even were mortgage financing more widely available, few households would be able to afford even the most minimal units given current construction and land costs. For example, assuming a minimal unit of 35 m<sup>2</sup> built according to "popular" construction would cost LE 1400. A small plot of 50 m<sup>2</sup> purchased on the urban periphery of Cairo might cost LE 1000 to LE 2000; in a better serviced or more central area, from LE 3000 to LE 4000. Thus, depending on location a small new "popular" unit might cost from LE 2400 to LE 5400. Were such a unit to be financed with a 25 percent downpayment (LE 600 to LE 1350), the downpayment would amount to from roughly 60 to 130 percent of median annual household expenditures. This, in itself, would be extremely difficult for most households to come by unless recourse could be made to repatriations from family members or significant jewelry or property sales. Were the

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<sup>1</sup>In a logit regression explaining saving, only education and income in the highest quartile were significantly related (positively) to saving.

<sup>2</sup>As in the case of saving, the only particularly strong predictor of "expecting to buy" was being in the highest quartile.

remaining amount financed over 20 years at 10 percent (bank rates are currently higher than that), monthly payments would range from LE 15 to LE 39 or from 17 to 45 percent of median household expenditures. Relative to expenditures at the twenty-fifth percentile of the income distribution, payments would represent from 27 to 71 percent of household expenditures. At the twenty-fifth percentile, food expenditures alone comprise roughly 70 percent of household expenditures; thus such units would clearly not be affordable without subsidy by low income households.

Nor is it feasible for most low income households to purchase existing units. Occupant survey owners were asked to estimate the current market value of their dwellings. Among formal sector owners in Greater Cairo, the median estimated market value of existing units was LE 10,000, with 50 percent of all units in the range LE 3000 to LE 20,000. Among informal sector households, the median estimated value was LE 5000, with 50 percent of units in the range LE 1625 to LE 10000. Thus, most existing units are, as well, beyond the range of low income households seeking to become owners.

The alternative for most Cairo households is, as it has been for some time, to remain as renters. Renters, however, face some of the same housing cost and affordability problems as potential owners.

### 8.3 Housing Costs of Renters

As noted above, 69 percent of Cairo area households and 26 percent of Beni Suef area households are renters. Major elements of housing costs affecting renters include contract rent, utilities, key money, and maintenance and renovation costs.

#### Gross Rent

A key variable of interest in examining renters' expenditures is gross rent—the sum of contract rent and utilities (electricity, water, and sewer). Median gross rents in Cairo and Beni Suef are LE 8 and LE 8.25 respectively, compared to median contract rents of LE 5 in each city. Thus utilities average about LE 3 per month in each site.<sup>1</sup> Half of all

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<sup>1</sup>Monthly utility payments for owners are roughly comparable.

Table 8-7

Gross Rent in Relation to Income and Household Size  
(Median Monthly Rent)

	<u>Cairo</u>	<u>Beni Suef</u>
<u>Income Quartile</u>		
1 (lowest)	7.1	2.4
2	6.5	3.6
3	7.5	6.5
4 (highest)	11.0	12.1
<u>Household Size</u>		
1 - 2	4.3	3.3
3 - 4	7.2	8.0
5 - 6	8.2	10.5
7 +	8.0	5.6
<u>Overall</u>	8.0	8.25

Source: Weighted occupant survey

renters pay between LE 5 and LE 13 in Cairo and between LE 4 and LE 14 in Beni Suef.

Table 8-7 indicates the relationship between gross rent and income and household size. Rents generally increase with each variable, although it appears that households with seven or more members spend no more, or even less, than somewhat smaller households.

The time when a household moved into its unit is also an important determinant of rent. Because of rent control, households' initial rents at the time they moved into their units persist or even decline. Households claimed, for example, that median initial contract rents were exactly the same as median current contract rents. This does not mean, however, that rents are uniform for different cohorts of households who first leased their units at different times. On the contrary, rent-controlled rents are tied to land and building costs and, as such, have been higher for more recently built units. Figures 8-2 and 8-3 illustrate the way in which rents vary depending on the length of time households have been in their units.

The figures indicate that median rents are considerably higher for recent movers than for established households. In Cairo, for example, households that moved into their unit within the past two years have median rents of LE 14 per month--75 percent above the overall median for Cairo renters. In Beni Suef, the median for movers within the past five years is also LE 14--again about 75 percent higher than the overall median. By contrast, households that entered their units more than 15 years ago have below average rents in each city.

#### Rent Burden

Rent burden is measured as the percentage of total consumption expenditures allocated to gross rent.<sup>1</sup> Table 8-8 indicates overall rent burdens and variations by income and household size. As the table indicates, overall median rent burdens are 10 percent in Cairo and 9 percent in Beni Suef. For 75 percent of renters, rent burden is between 6 and 16 percent in Cairo and 5 and 13 percent in Beni Suef. By conventional standards, rent burdens in this range are not considered high.

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<sup>1</sup>As indicated earlier expenditures are a better measure of true income than current reported income.

It should be noted, however, that rent burdens for some groups of households are notably higher than average. Cairo renters in the lowest income quartile, for example, have median rent burdens of 14 percent and a substantial fraction of them have even higher rent burdens (25 percent of lowest quartile households have rent burdens above 28 percent).

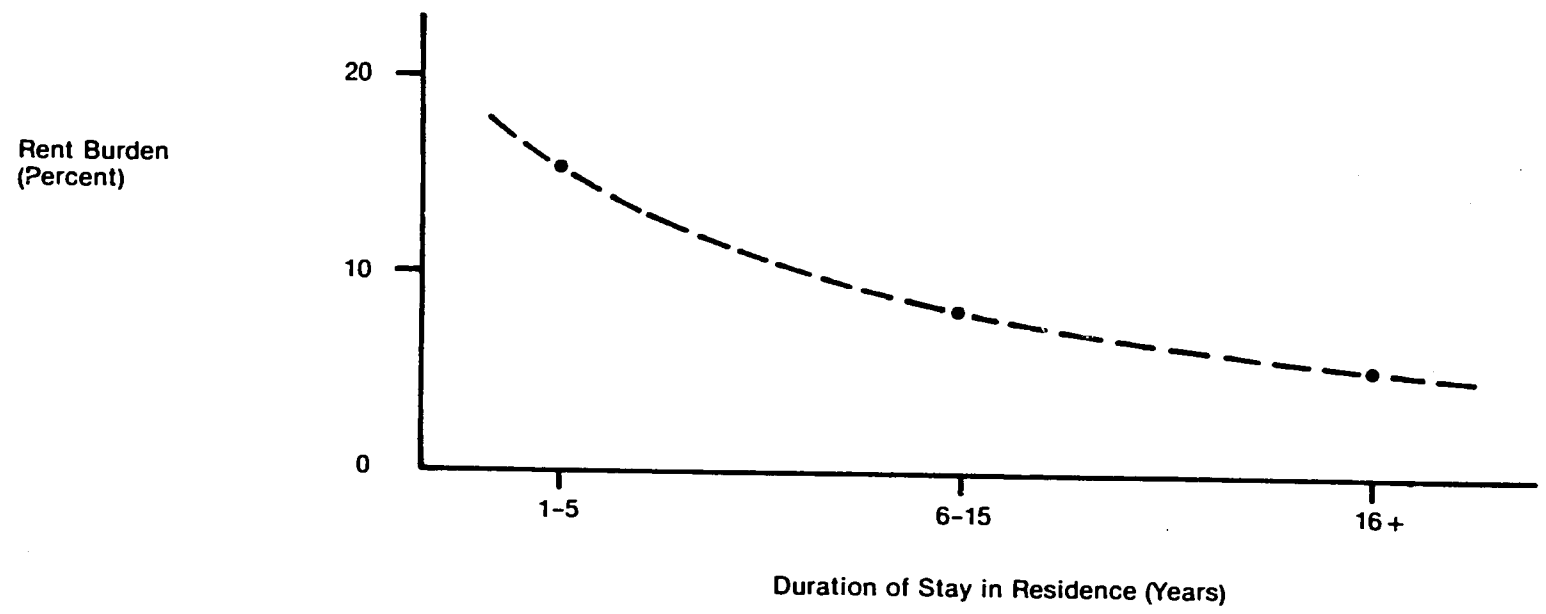
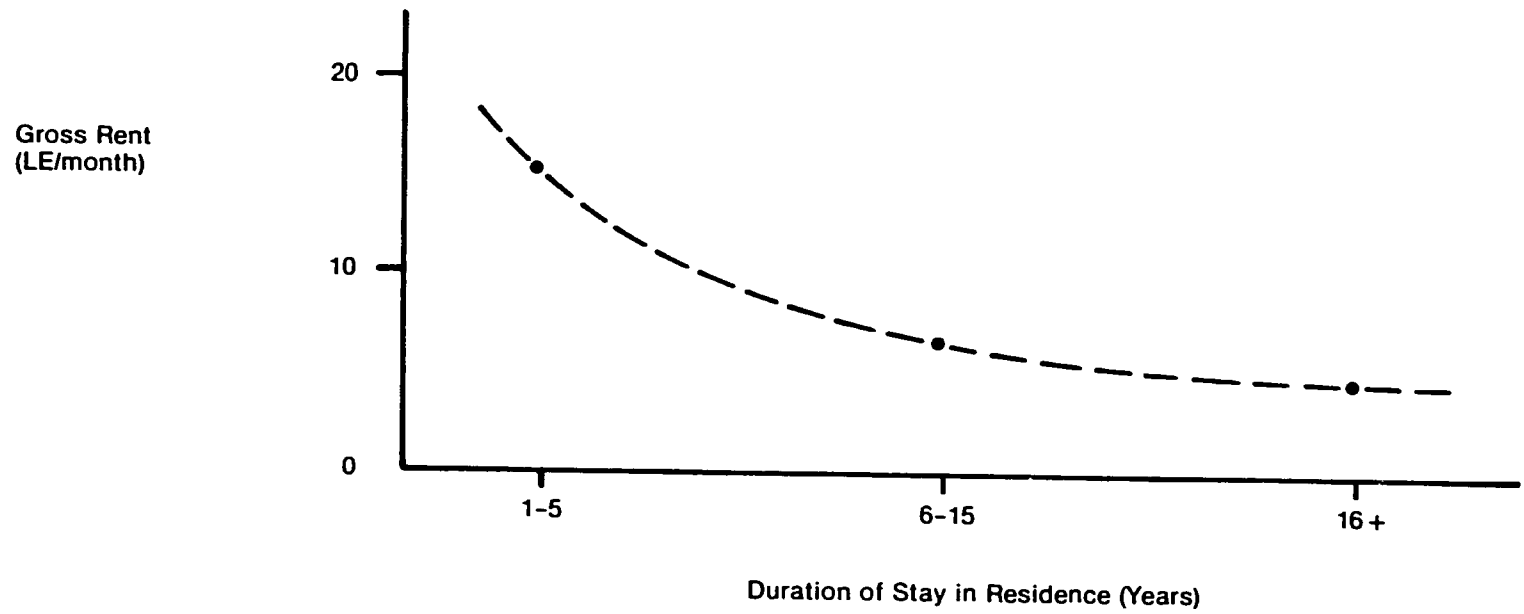
In addition, as Figures 8-3 and 8-3 illustrate, recent movers face higher rent burdens than do established households. For example, Cairo households that moved in within the past two years have median rent burdens of 17 percent; Beni Suef movers within the past five years, median rent burdens of 15 percent--in each case, about twice the overall median.

The higher rent burden of recent movers is compounded by the fact that many of them had to pay substantial key money to obtain their units.

### Key Money

The level and incidence of key money have been rising over time at very high rates. Overall, about 20 percent of Cairo renter households reported paying key money; only about 4 percent of Beni Suef households reported paying it. Among households moving within the past two years, for example, the reported incidence of key money was 53 percent; among movers five to six years ago, 30 percent; and among movers more than 20 years ago, 9 percent. Not only has the incidence of key money changed, but typical amounts have changed as well. For example, the reported mean payment for movers within the past five years is LE 1387; for movers within a six to fifteen year period, LE 363; and for movers 16 or more years ago, LE 92 (corresponding medians are LE 600, LE 150, and LE 32). Together the increase in both amount and incidence of key money has been at a rate in excess of 30 percent annually--paralleling or even exceeding recent rates of increase in construction and land costs. Thus, it is apparent that the institution of key money provides an equilibrating mechanism which ensures that "true" rents for newly produced units are in line with costs of production. Moreover, the rapid rate of increase in key money makes it profitable for some landlords to hold units off the market in hopes of higher future gains. This provides at least a

**Figure 8-2**  
**Gross Rent and Gross Rent Burden in Relation to Duration of Stay: Beni Suef**  
**(Medians)**



Source: Weighted Occupant Survey

**Figure 8-3**  
**Gross Rent and Gross Rent Burden in Relation to Duration of Stay: Cairo**  
**(Medians)**

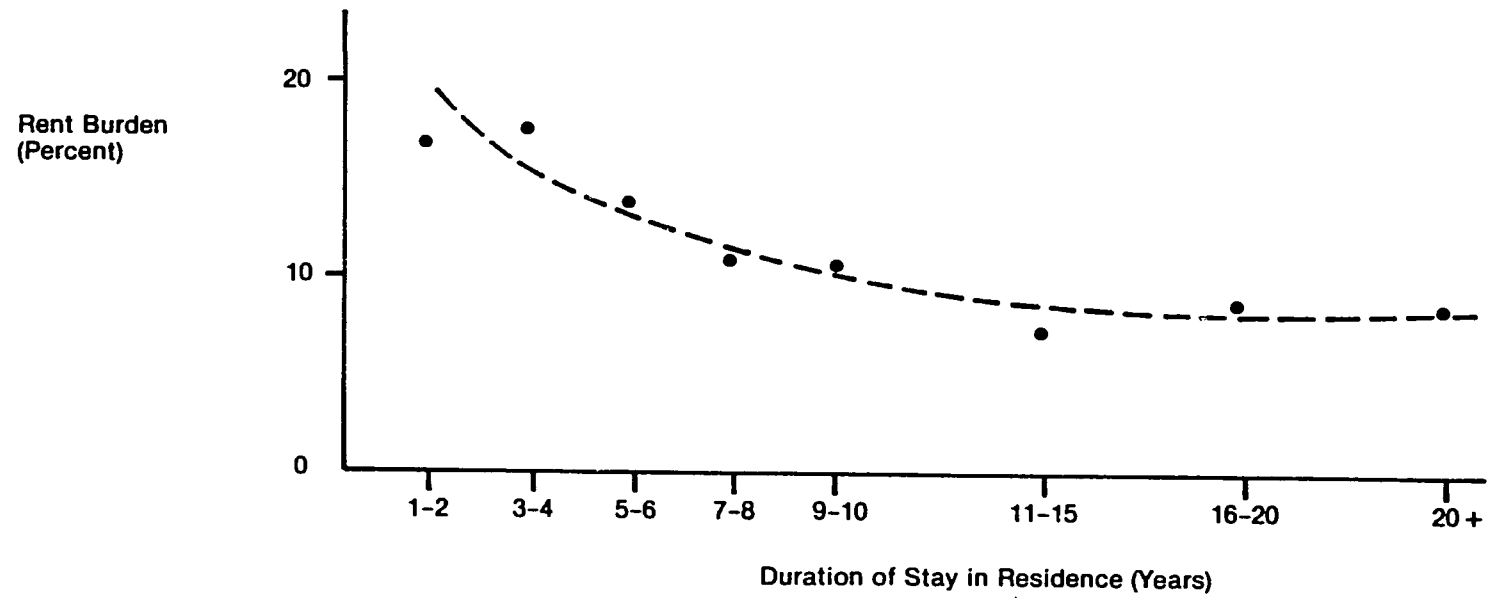
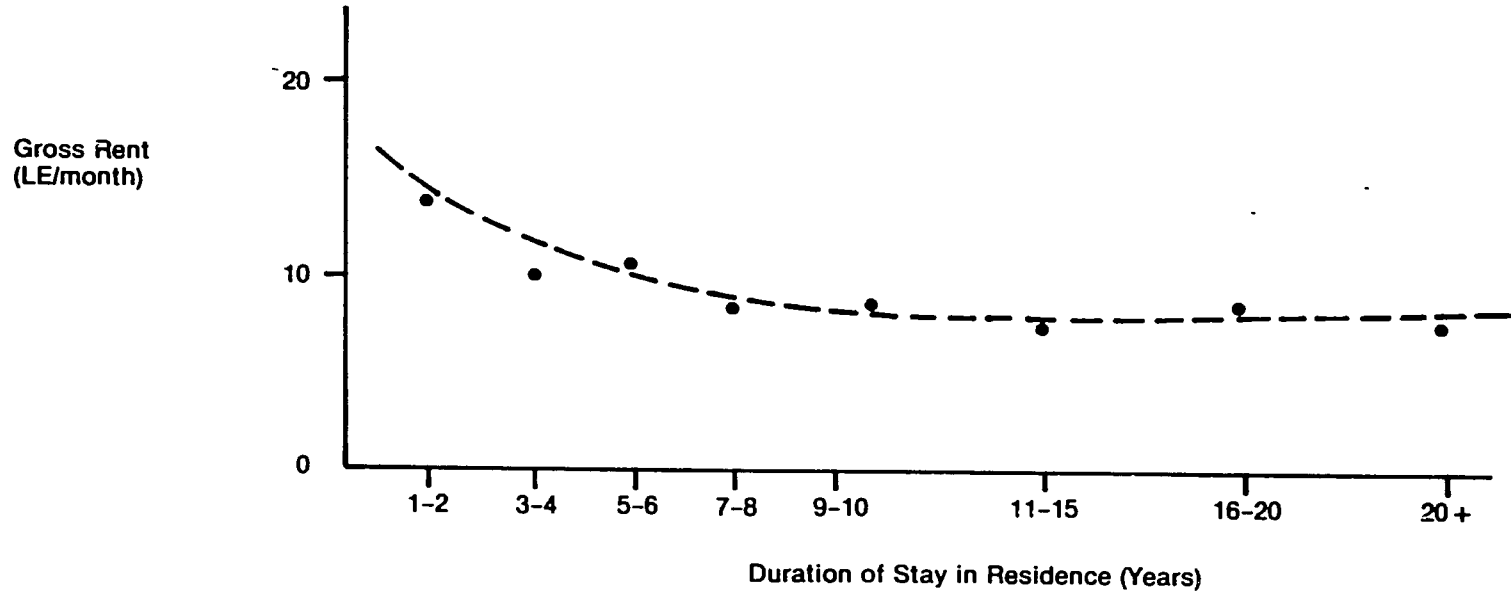




Table 8-8

Gross Rent Burden in Relation to Income and Household Size  
(Median Percent)

	<u>Cairo</u>	<u>Beni Suef</u>
<u>Income Quartile</u>		
1 (lowest)	14	15
2	10	10
3	8	10
4 (highest)	8	7
 <u>Household Size</u>		
1 - 2	5	5
3 - 4	6	9
5 - 6	9	9
7 +	9	6
 <u>Overall</u>	 10	 9

Source: Weighted occupant survey

partial explanation for the apparently high vacancy rates now prevalent in Cairo.<sup>1</sup>

### Multivariate Analysis of Rental Expenditures

As noted in the preceding discussion, rental expenditures are influenced by income, household size, and duration of residence. A multivariate regression was used to sort out separate effects of these and other variables on rental expenditures.

Three alternative dependent variables (in logarithmic form) were used in the analysis: contract rent, gross rent, and "full rent," where full rent is defined as the sum of gross rent and the opportunity cost or foregone income that could be earned on key money payments. In imputing income from key money, an interest rate of 10 percent per year was assumed. Independent variables were household income, household size, length of residence in the unit, and education level of the household head. Two different income measures were used--current reported income, and a measure of "permanent" or normal income. Empirical results for all three dependent variables were similar. Only the results for full rent are presented here. Those results are summarized in Tables 8-9 and 8-10. The most important determinant of rental expenditures is household income. In Cairo rental expenditures increase by 2.4 percent for each 10 percent increase in current income and by 3.8 percent for each similar increase in permanent income. In Beni Suef, each of these relative increases is larger--5.3 percent and 8.3 percent respectively. Households headed by holders of university degrees spend 30 percent and 10 percent more respectively than do other renter households in Cairo and Beni Suef. These patterns probably reflect a relatively higher preference for housing among such households.

As indicated above, duration in a unit has a strong impact on rent. Relative to households that have been in their units for six to

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<sup>1</sup>Once a landlord rents a unit and accepts key money, his rate of return on investment is determined since rents are then fixed by rent control and key money can not be renegotiated. By holding a unit off the market, a landlord can achieve a higher rate of return than by renting now if the expected increase in key money discounted to the current period is greater than the present discounted value of key money possible now and rents during the period a unit is expected to be held off the market.

fifteen years, households of five or less years' duration pay 36 percent more in Cairo and 83 percent more rent in Beni Suef. Compared to the reference group, households of 11 to 20 years duration pay 26 percent less in Cairo and 7 percent less in Beni Suef, while those of more than 20 years duration pay 36 percent less in Cairo and 46 percent less in Beni Suef. These indicated increases in full rent imply that households in the tenth percentile of the income distribution who have moved within the past five years confront expected rent burdens of 31 percent in Cairo and 22 percent in Beni Suef. Similar households who moved more than 20 years ago are estimated to have rent burdens of only 16 and 7 percent respectively. Thus, households just entering the rental market face highly different, and more financially precarious, conditions than do households that entered the market some time ago.<sup>1</sup>

After controlling for the effects of income, education, and length of residence, household size is estimated to have no significant impact on expenditures. As noted earlier, household size is not estimated to affect space consumption either.

#### Maintenance/Renovation Expenditures

Another cost that renters incur is that of maintaining their units and, in some cases, their buildings. Households were asked in the occupant survey to estimate the amount of money they spent in the previous year on repairs and renovations. In Cairo 47 percent of all renter households claimed to have spent money for repairs or renovations, with a median expenditure level of LE 50--a significant portion of household income. In Beni Suef, the incidence of such expenditures was somewhat lower, 39 percent, and the median amount was lower still, LE 6. Renters in each city claim that either they or specialized workers do the required maintenance in their dwelling, reporting overwhelmingly that they rather than the owner pay for such maintenance. As in the case of other elements of rent, expenditures on repairs and renovations are positively related to income levels; households in the upper two income quartiles are about 40 percent

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<sup>1</sup>Unfortunately it is not known whether or not households just entering the market today face relatively more burdensome housing expenditures than did comparable households in the past. This could only have been ascertained based on data on retrospective incomes which were not collected in the occupant survey.

Table 8-9

Determinants of Rental Expenditure: Cairo  
(Dependent Variable Log of Full Rent)

	Regression Coefficients			
	Current income, with house- hold size	Current income, without house- hold size	Permanent income with house- hold size	Permanent income, without house- hold size
Intercept	1.140** (.316)	1.146** (.307)	0.470 (.961)	0.495 (.476)
Log current income	.247** (.069)	.241** (.068)		
Log permanent income			.384** (.106)	.379** (.105)
University degree (1 = yes)	.425** (.135)	.442** (.131)	.254+ (.159)	.263+ (.157)
Household size 1 or 2	-.022 (.178)	--	-.017 (.178)	--
Household size 5 or 6	-.001 (.112)	--	.030 (.133)	--
Household size 7+	-.072 (.123)	--	-.029 (.122)	--
1 to 5 years in unit	.269* (.136)	.273* (.131)	.301* (.135)	.309* (.131)
11 to 20 years in unit	-.277* (.122)	-.284* (.121)	-.295* (.122)	-.296* (.121)
21+ years in unit	-.394** (.129)	-.409** (.126)	-.445** (.129)	-.452** (.126)
R <sup>2</sup>	0.26	.26	0.26	.26
N	249	249	249	249

Table 8-10

Determinants of Rental Expenditure: Beni Suef  
(Dependent Variable Log of Full Rent)

	<u>Regression Coefficients</u>			
	<u>Current income, with house- hold size</u>	<u>Current income, without house- hold size</u>	<u>Permanent income with house- hold size</u>	<u>Permanent income, without house- hold size</u>
Intercept	-.391 (.514)	-.412 (.471)	-1.543* (.702)	-1.727** (.637)
Log current income	.497** (.115)	.532 (.104)	--	--
Log permanent income	--	--	.767** (.161)	.825** (.142)
University degree (1 = yes)	.296 (.204)	.243 (.194)	.129 (.211)	.093 (.194)
Household size 1 or 2	.103 (.292)	--	-.035 (.275)	--
Household size 5 or 6	.289 (.184)	--	.162 (.184)	--
Household size 7+	.209 (.261)	--	.095 (.259)	--
1 to 5 years in unit	.577** (.211)	.563** (.204)	.623** (.205)	.603** (.196)
11 to 20 years in unit	-.001 (.206)	.024 (.190)	-.070 (.200)	-.077 (.182)
21+ years in unit	-.622* (.324)	-.599* (.301)	-.590* (.315)	-.614* (.288)
R <sup>2</sup>	.53	.50	.56	.55
N	61	61	61	61

(20 percentage points) more likely to have incurred such expenses during the previous year.

Policy Issues and Current Policy Instruments

Information collected in this study helps to illuminate a number of shelter policy issues. This chapter reports and interprets the views of those interviewed, particularly the government officials responsible for designing and implementing housing policies.

Of greatest concern here are two objectives most often referred to by government officials: adequate housing for all and the conservation of agricultural land by controlling and containing urban growth. The achievement of these objectives requires an understanding and possible management of a series of relative shortages or demand/supply relationships: land, labor and materials. Central and local government have at their disposal a number of policy instruments to manipulate market forces to achieve the overall objectives: negative controls, mainly the design and enforcement of laws prohibiting certain actions; and positive inducements to encourage appropriate development.

### 9.1 Adequate Shelter for All

The widely quoted National Housing Plan estimates a shortage of 3.6 million dwelling units by the year 2000:

	<u>Million Units</u>
Population growth	2.196
Replacement	0.576
Upgrading and homeless	<u>0.828</u>
Total	3.600

This means that an average of 180,000 units per annum have to be constructed. A senior Ministry of Development official thought present capacity to be 60,000 units per annum, although it is apparent that the capacity of the informal sector is considerably greater.

Turning from the national picture to Cairo, the governorate was not very active prior to 1970. An official reported that between 1955 and 1970 it built only 2,600 low income housing units and 255 middle income units. Over the same period only 4,500 requests for housing were received --although people only made requests when they read in the newspapers that

houses were available. This public housing was located on governorate land in Galat al-Kabsh, Ibn Tulun Mosque area, and Ain Sira (near Fustat). The governorate estimates 56,000 units per annum will be required in the 1980s, allocated as follows:

Population growth	39,000
Without homes	8,700
Liabile to collapse	7,000
To be demolished	300
To ease density	<u>1,000</u>
Total	56,000

Of the numbers required to accommodate population growth, 16,000 units will be for immigrants.

The governorate is currently building 50,000 units at Birket, to be completed in about two years time. Officials willingly admit they need the support of those now active in the informal sector, but insist that the law should be obeyed and infrastructure only provided to registered land for buildings with permits.

The Governorate of Qalyubiya will construct 2,000 units in 1982 for low to moderate income groups, with a LE 4 million subsidy. Last year it constructed 1,512 units with the same subsidy. The current shortage is thought to be 5,000 units. The governorate is providing 30 year loans at 3 percent interest with 20 percent as a down payment.

The Governorate of Beni Suef sees the most immediate pressing problem as the poor condition of many existing structures. It is thought that 40 percent in the city are threatened with collapse.

Governorate and other officials believe that housing programs should be targeted: public schemes for the poor, as much self help as possible, subsidies through infrastructure provision.

The cooperative movement was designed to help relatively low income groups, those planning 100 sq.m. or smaller units qualifying for 3 percent loans. The units constructed by the cooperatives tend to be too expensive for low income groups. Some members interviewed were disillusioned, having made deposits some years ago and seen nothing for their investment. The Ministry of Planning gave approval for LE 25 million in 3 percent loans to cooperatives in 1980.



There is a common view that the best way to solve the housing problem is merely to provide main line infrastructure links to vacant non-agricultural land on the urban fringe and then leave it to the private (largely now informal) sector to supply the housing.

However, the National Housing Plan does propose direct intervention and calls for 650,000 urban units to be constructed in the 1980/81 to 1984/85 Plan period: 55 percent "economic" housing, 37 percent "average," and 8 percent "luxurious." Forty percent is to be constructed by the public sector. For budgetary purposes the average price of these units is assumed to be LE 3,500 in 1980/81 rising to LE 5,500 in 1984/85. Fifty-thousand dwelling units are to be built in rural areas over the same period, with a total allocation of LE 250 million.

The Ministry of Planning's Construction Industry Department has estimated activity by public/private sector for Five Year Plan purposes. Figures are percentages of all projects approved by the Ministry of Planning.

<u>Executing Authority</u>	<u>Total</u>	<u>Housing</u>	<u>Other Projects</u>
Ministry of Development (Housing) Companies	46	5	41
Companies from Other Ministries	24	1	23
Private Sector	<u>30</u>	<u>6</u>	<u>24</u>
Total	100	12	88

Only a small proportion of the Plan's construction funds is going into housing, half of the housing allocation to the 2,500 or so private contractors working on government projects, most of the overall total to the 31 public sector contractors, who may be the only ones geared up to handle large projects, mainly infrastructure.

Aside from expressing concern with the potential role of the public sector, many officials were concerned with the role of the private sector, particularly with regard to factors that tended either to inhibit production or increase costs. Land prices were an almost universal concern, for example. As discussed earlier, recent rates of increase of from 25 to 40 percent annually have not been uncommon. Interviewed officials often suggested that price rises were in part the result of the failure of serviced land to keep pace with the demands of the population, and that schemes to increase the rate at which infrastructure is extended and

land serviced would help to moderate future increases.<sup>1</sup>

Some such development schemes involve a mix of housing types and the principle of cross-subsidization to write down land costs for low income groups. In a recent study Dr. Hussein Fayege Subour (Al-Ahram, June 19, 1981) called on the government to encourage the participation of the private sector in housing construction by providing suitable land for construction. He proposes that the Government develop accessible land, providing it with facilities and dividing it among the three types of housing according to need. The Government would then sell the lots designed for luxury housing at higher than the cost of preparing it (although still at a cost lower than that of land bought from the private sector). Land for middle income housing would be sold by the Government at cost; and the land set aside for low income housing would be provided below cost, with the revenues from the sale of luxury construction land used to cover the losses from selling the third category of land below cost. He would also have the government levy taxes or fees on luxury housing to be used as subsidies to those investing in low cost housing. Thus, government subsidies in selling the land it developed below market price would involve a sliding scale, with the subsidy to luxury construction at 10 percent, to middle income housing at 20 percent, and to low or economy housing at 60 percent.

Increases in building costs, both labor and materials, were also cited as objects of concern in and of themselves and also as factors inhibiting production. Accusations of hoarding of materials were heard by some officials and contractors, with the implication that crackdowns on hoarding and speculation would help to reduce prices.

Materials shortages are admitted by officials. Some believe the main job of the Ministry of State for Housing is to ensure adequate supplies of materials. The Ministry plans to increase cement production from 3.7 million tons to 12 million tons in 1985 (at present 3 million tons are imported). Steel output will rise from 200,000 tons to 1 million tons by 1985. Brick substitutes are to be encouraged: a call for tender has been issued for the construction of 20 new brick factories

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<sup>1</sup>Land development problems are the subject of another related study --the "Cairo Land Use/Infrastructure Development Study." USAID and Dames and Moore.

and 8 sand/lime brick factories. Gypsum production is to be increased from 370,000 tons to 1.5 million tons over the same period. Brick production will remain largely a private sector activity and the rest, public sector. Donor assistance has been requested to help increase the potential of the contracting sector by introducing new techniques and equipment and developing better management.

Of particular concern to many officials and legislators was the effect of the rent control law on new production. Under pre-1981 laws rents were set to permit rates of return of 5 percent on building costs and 3 percent on land. Cost figures were, however, determined administratively, often resulting in cost bases lower than actual construction costs. The resulting nominal returns are well below current rates of return in banks or other investments. Hence, many are concerned about the potentially inhibiting effect of rent control on new rental housing construction.

In response to such concerns and with other general concerns about housing costs and perceived shortages, the National Assembly passed a 1981 law to encourage expansion of the housing sector (see Appendix 4 for a translation). Article 1 of the law permits an increase in rents which raises the rate of return on units to be built and rented henceforth to 7 percent. At the same time, Article 1 calls for two-thirds of units in new buildings to be set aside for rental rather than sale. Property owners also receive property tax concessions and tax free status of rents. These provisions are widely advanced as a stimulus to the private housing sector and, in particular, for low-to-moderate income rental housing.

Several aspects of the new law have, however, been subjected to criticism. The most serious criticism has been directed at Article 1, emanating especially from owners and small contractors in the private sector. But some criticism has also come from those who maintain that housing for the poor should be the responsibility of the public sector. Private sector interests claim that the 7 percent ceiling on rents is too low to encourage investment in non-luxury housing. They maintain that the 7 percent rate must be compared with interest rates on certificates of deposit which pay (as of the end of July 1981) 12 percent on Egyptian pound accounts and up to 19 percent on dollar deposits. In fact, given the magnitude and prevalence of key money payments, it is not clear that average rates of return in real estate investment are not already well above 7 percent. Moreover, as some owner/builders pointed out, the 7 percent rate is approximately

half the interest rate they must pay to the banks for construction loans. Finally, the added restriction fixing the proportion of units which must be offered for rent as opposed to sale or renting "furnished," makes investment in low to medium level housing a losing proposition in their eyes. One of these owner/builders expressed his apprehension in an interview as follows:

"If you leave your land vacant, you pay 2 percent of its value in taxes annually. If you get a loan to build on it, the bank will charge you 14 percent compound interest. If you make an agreement with the bank that you will pay back the loan from the sale of the units, you are confronted with the provision that limits what you can sell to one-third of the space, while having to rent two-thirds at no more than 7 percent of the property value at the time you built. You are getting 7 percent, paying the bank 14 percent. Do you think that is going to encourage anyone to invest in housing? How can the Government limit the private sector builders to offering one-third of the space for sale, when it is selling its own buildings (construction by the public sector) without restriction? If they insist on these restrictions, they should make loans available at the same rate to those who want to build. Otherwise it is like everything else; a lot of talk that is never going to solve anything."

The response of Government to these charges is that their advocates do not take into account property appreciation which, when added to the 7 percent revenue from rent, offers sufficient incentive. The owners, however, see appreciation as a future, undetermined benefit achieved only if and when the property is sold. The investors say they are looking for income rather than equity.

On the surface, many of these criticisms appear to be valid. Thus one should be skeptical that the new law, by itself, will have a major impact on either increasing housing supply or tilting the distribution in favor of less-well-off households.

One other provision of the law, however, holds promise, if it is adequately supported. Article 15, which supports cooperative housing, provides, in part, that "individuals desiring to add stories to their houses, to complete unfinished construction, or to invest in 'economy' housing will have access to low interest loans provided by the government or the banking institutions." In light of current trends of vertical expansion of the existing housing stock, especially in the informal sector, active implementation and adequate funding for this provision could be extremely cost effective as a way of producing additional units.

## 9.2 Conservation of Agricultural Land by Controlling and Containing Urbanization

Every official contacted affirmed the conservation of agricultural land as a cornerstone of Egyptian development policy. None considered urbanization a more efficient use of that land. The rationale for this policy objective includes:

1. Egypt is becoming more dependent on imported food--for example, it imported 5 million tons of wheat in 1979, twice the level of domestic production. While population has increased by about 2.5 percent annually since 1965, agricultural output has increased by 2 percent annually;
2. The use of reclaimed lands as a substitute for old lands lost to urbanization is likely to reduce average yields and increase real costs.<sup>1</sup>

The rate of loss of agricultural land concerned many interviewees. Between 1972 and 1978, urban land use in Qalyubiya doubled and 6,900 feddans of agricultural land were lost to urbanization.<sup>2</sup> The 1950 1:5,000 map of Cairo shows very little urbanization along the road to the Pyramids in Giza. The 1978 maps to the same scale show a strip of urbanization along the road over 1 km wide, with fingers reaching into more agricultural land.

Officials have identified the major obstacle to dealing with informal development as the removal of their power to regulate subdivision of any kind when that development occurs on land which has been defined as "agricultural."

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<sup>1</sup>See AID/Pacific Consultants New Land Productivity Report.

<sup>2</sup>See National Urban Policy Study LANDSAT Analysis.

They attributed this limitation to the enactment of the 1978 Agricultural Law which vests power of authority in the Ministry of Agriculture to develop any land defined as agricultural by the Land Reclamation Act. Before 1978, local officials nominally had the authority to regulate subdivision and infrastructure provision on such land. In principle, local and governorate officials agree with the policy of land reclamation and expansion of agricultural land outside the city cordon, but the reality is that agricultural land is being illegally converted to residential use on a widespread basis throughout Egypt. Many officials would prefer a return to a system of greater local control of such development.

### 9.3 Current Policy Instruments and Attitudes

There is a heavy current reliance on negative controls: forbidding development in certain areas and controlling the market by limiting supplies (the effect, if possibly not the intention). These controls have not achieved the policy objectives of stimulating the supply of adequate housing or of controlling conversion of agricultural land.

#### Negative Controls: Law Enforcement

If over 70 percent of the housing is informal and builders without permits use non-subsidized materials, then it is evident that the government is only controlling supplies to a small proportion of the market. Building continues on agricultural, illegally subdivided land, without permits.

The problems of those who wish to enforce the law were described in Chapter 3. There it was indicated that the level of informal activity is high and enforcement officials simply overwhelmed by their job. Even when enforcement officials nominally perform their jobs, citing offenders of subdivision and building permit laws, these activities can backfire. For example, "ownership" is claimed by means other than official registration. When a Manshe'it Sadat subdivider obtained a court order supporting the sale of his land, he considered that sufficient legal title. This is a common device. People grasp at straws of ownership: one owner was pleased to receive a "ticket" and LE 10 fine from a policeman, since it officially recognized him as owner.

The government even has problems with its own land. Some time ago an official attempt was made to repossess 64 feddans of government land in Manshe'it Sadat for the water company. Occupants were sent an official, registered letter asking them to leave; they would be paid LE 10 sq.m. for the land, LE 3 for the buildings. The occupants were pleased that the authorities officially recognized them as owners of this government land (some of which had been traded many times). They also went to court against the government repossession and won.

Many senior government officials interviewed want the law to be vigorously enforced. One thought donor agencies should provide bulldozers (two Cairo region governorates do not own one). But the magnitude of the informal sector makes significant enforcement impossible. In the relatively few cases of houses demolished by the government, owners generally rebuild them. Some think it more reasonable to reduce the inclination to violate laws by encouraging development in socially suitable areas and framing more realistic and appropriate standards. New regulations concerning land use master planning currently under consideration by the People's Assembly, are examples of this type of thinking.

#### Positive Controls: Financial Support and Infrastructure Provision

Although none of the participants in the supply process cited any particular financial problem, their level of activity could have been raised if more credit were available. It is very clear that the rate of informal construction is directly related to the supply of personal, private, local savings and that those savings tend to be transitory.

A large fraction of Cairo and Beni Suef families interviewed in the household survey gave as their main complaint insufficient rooms, implying they did not have access to enough funds. Examples were given of buildings going up very quickly (one month per floor) but others took many months to construct because funds were not available. Almost every single contractor and subcontractor accumulated the capital necessary to start his business either by selling/subdividing inherited land or by spending some years in another Arab country. Almost none of the suppliers had surplus funds to store, hoard and speculate in materials.

The formal financial sector has no direct impact on the informal housing sector, therefore, no impact on most low to moderate income housing. Even the subsidized cooperative loans tend to go to reasonably well-off

members of the communities (many of the upper middle class seem to be members, often through nominees, as are some middle and upper-lower income people).

The materials subsidies also tend to go to the middle income earners since they are only available for private formal and public housing, although some of these materials filter down to the lower income groups through the black market.

The recent draft report of the USAID Housing Finance Mission<sup>1</sup> lists a number of problems restricting the involvement of the private sector in housing:

- Rent controls;
- High taxation of bond interest income resulting in the absence of a bond market;
- Disparity between incomes and real market costs;
- Short term investment bias, abetted by the rapid inflow of new wealth and by government intervention.

The prospects for increased activity by the private formal financial sector are not thought to be good.

The Helwan project has pioneered relatively low interest loans (7 percent) to low income groups (target income LE 900 per annum) with affordable rates of repayment (25 percent of income per month) through an existing institution (Credit Foncier).

The owners are providing most of the finance which initiates the informal housing process: they give advances to contractors who pass them on to subcontractors. The Helwan project is following this pattern. It might be worthwhile to experiment with additional "targets" such as contractors and subcontractors so that they require lower deposits from owners. This would mean that local banks (which would have to be set up) would have to deal with fewer individuals and transactions, leaving it to the contractors to ensure the credit-worthiness of the owner.

Although the government has little role in financing informal housing construction, it plays an important role in providing infrastructure. Up to 1977, sewer and water connections were made by govern-

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<sup>1</sup>"Housing Finance: An Analysis of Prospects for Increased Activity," March, 1981; USAID.



ment authorities to some informal housing. Since then, such connections have been forbidden by law, although as discussed in Chapter 4, private residents may organize themselves to connect with water and sewer lines installed nearby prior to the 1977 decree. One of the results of this situation was that a foreign loan approved to provide water for 40,000 low-income Cairo families was never drawn down because most of the settlements concerned were found to be illegal and so the governor refused authorization for the hookup to the main system.

The matter seems to be solved periodically by the government declaring all informal settlements formal. That such effective political pressure can be brought to bear shows how well organized many of these informal settlements are. For example, the Cairo Governorate council recently passed a decree which would allow water and sewerage hookups by illegal homes. The water and sewerage authorities are presently making plans to do so, subsequent to approval of the decree by the People's Assembly. Each area will submit plans to the governorate, which will tentatively approve them and pass them on to the respective authorities. The main limiting factor will be sewerage. In-home water connections will only be permitted if hookup to sewer mains is also possible. Otherwise, cesspools and public fountains will be provided. A national organization for water and sewerage is expected to be set up soon to facilitate cooperation in providing these two infrastructure elements.

Most officials interviewed believed that the solution to the illegal subdivision problems would be for the government to purchase, subdivide and resell non-cultivable agricultural land within the cordon.<sup>1</sup> This would, in turn, facilitate the provision of infrastructure and protect productive agricultural land. Beni Suef officials believe that an effective way to increase agricultural lands and protect existing ones on the urban periphery could be achieved by requiring that agricultural landowners subdividing land within the city cordon compensate the government per parcel as a precondition for developing their land. The funds collected could then be used for government reclamation of agricultural land on the periphery and beyond. By giving landowners in the city this option, hundreds of

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<sup>1</sup>Considerable evidence was adduced in interviews to the effect that much agricultural land had become non-cultivable--because of pollution or salinization of ground water supplies or because drainage canals had been filled in.

feddans would be opened up for residential development and the haphazard encroachment on agricultural land decreased. Informal neighborhoods usually form around existing villages on the urban periphery where there is little or no infrastructure, and between these areas and the city once where infrastructure capacity is strained. The consolidation of development in controlled subdivisions would lessen basic service provision costs and contain urban development within the cordon.

Evaluation and Recommendations

Recommendations concerning informal housing should be based on a recognition of both the accomplishments of the informal sector and the problems associated with it. This chapter first recapitulates some of the salient findings of the study concerning the accomplishments and problems of the informal housing sector and then discusses a number of ways in which policies, programs, and procedures might be modified to build on the strengths of the informal housing process or deal with the problems created by the sector.

10.1 Principal Findings

Principal findings of the study are:

1. The bulk of housing currently being supplied in Egypt is informal housing.

Of units built between 1970 and 1981, 84 percent in Cairo and 91 percent in Beni Suef were estimated to have been informal. These estimates accord remarkably well with those of a recent World Bank/GOHBPR study of the construction industry in Egypt which indicates (when adjusted) that of units built between 1966 and 1976, perhaps 81 percent of urban and 89 percent of rural units were informal. It is significant that altogether different techniques were used in estimating informal building activity in this study and in the World Bank/GOHBPR study, lending credence to the results of each.

2. The quantitative contribution of the informal sector has been essential in maintaining parity between increases in population and increases in the housing stock.

In Beni Suef, the housing stock has recently grown (1976-81) at about the rate of population; in Cairo, housing has grown even more rapidly than population. In each city these trends represent the continuation of housing and population trends observed between the 1966 and 1976 censuses. In each case, had it not been for the contribution of the informal sector, substantial housing shortfalls would have occurred. Instead, the housing stock has expanded not only at a rate high enough to accommodate new household formation and in-migration in each city, but also to accommodate some moves by established households simply changing their place of residence. In Cairo, the stock has recently expanded to such a degree that a vacancy rate of 5.5 percent of the occupied housing stock has been created, the majority of which is concentrated in predominately informal areas. Much of this expansion has

come from vertical expansion of existing buildings, a particular feature of the informal sector. Indeed, as much as half to two-thirds of all housing units added to the Cairo housing stock between 1976 and 1981 was estimated to have come about through vertical expansion.

3. Informal housing is similar in many ways to formal housing.

Building designs, building materials, and interior amenities such as kitchens, toilets, and number of rooms are similar for many informal and formal households. In Cairo this results in roughly comparable levels of expressed satisfaction with their dwelling units by formal and informal occupants.

4. Recently built informal housing is of better structural quality than average existing housing in both Cairo and Beni Suef.

Much older housing in both cities is of poor structural quality. New informal housing, while not of comparable quality to new formal housing, is nevertheless of far better average quality than older existing housing. Consequently, recently built informal housing has, on average, added to the overall quality of the housing stock in each city.

5. Informal housing is significantly less well supplied with infrastructure than formal housing.

Most informal households first obtain their land or building with no utility connections; most formal households obtain property with utility connections. Over time these differences often become smaller at least in Cairo, but do not disappear. This process, however, is neither inexorable nor universal. In Beni Suef, for example, the level of infrastructure provision is much lower than in Cairo, with informal households even more poorly served. Differences in access to infrastructure between formal and informal households persist over time. Also, in some case study areas in Cairo, levels of infrastructure provision were found to be surprisingly low given city-wide levels of access. This suggests that political considerations affect decisions to extend infrastructure to informal areas, and that classifying an area as informal and thus not deserving of infrastructure lines may simply be a convenient rationale for rationing scarce infrastructure resources.

6. Attempts to control the informal sector have largely not succeeded.

Denial of infrastructure to informal areas, fines, harassment by authorities, and occasional demolition of informal buildings have not kept the informal sector from expanding greatly. Few, if any, households express any anxiety about the consequences of having failed to register land or buildings, or having failed to obtain a building permit. Informal

areas continue to expand into agricultural land at a high rate (although to the degree that vertical expansion occurs this rate is lower than it might otherwise be).

7. The informal sector appears to be affected by general market conditions in much the same way as does the formal sector.

Building costs have increased in much the same way for informal and formal sector households. For example, when informal sector contractors were asked to recall recent changes in building costs, estimated rates of change were nearly identical to those of similar changes in "official" building cost indices. Even more importantly, land costs have increased as much in informal areas as in formal areas (once having controlled for characteristics of land such as access and neighborhood features, estimated land prices are no different for formal and informal areas).

8. Housing cost increases that have occurred recently have placed an extreme burden on households wishing to become owners or renters for the first time or to change their place of residence; low income, large families have been most seriously affected by these changes.

Households that have moved into a unit within the past several years are spending twice the fraction of their income on housing as average households that have not moved recently. For households in the lowest income quartile, this has meant a doubling from about 15 percent of income to about 30 percent of income. With food consumption requiring between 60 and 70 percent of income among the poor, this placed low-income households in an extremely precarious financial position. Similarly, the food requirements of large families sometimes leave them with less disposable income for housing and other goods than is the case for smaller households; cost increases jeopardize their finances in a way similar to the case of low-income households.

9. The most significant factor responsible for housing cost increases in recent years has been increases in land costs, although costs of construction materials and labor have also increased rapidly.

Land price increases at compound annual rates of from 25 to 40 percent have not been uncommon in Cairo during the past decade. A major factor in these cost increases appears to have been the rapid increase in remittances from workers abroad which are channeled into land and housing construction at a high rate. Costs of building materials and labor

have increased less rapidly (at annual rates of from 15 to 20 percent) but have nevertheless outpaced general inflation. These trends have resulted in a situation in which typical land costs exceed costs of constructing a single modest dwelling unit in most areas of Cairo.

Costs of construction per se are made up of from 10 to 30 percent in construction wages and the remainder materials and profit. Thus reductions in land costs have the potential for achieving the greatest overall reductions in housing costs, followed by reductions in materials and labor costs respectively.

These findings provide a useful background against which to consider possible changes in policies, programs, and procedures to improve the lot of low-to-moderate income households and to support the general policy objectives of the Egyptian government.

## 10.2 Recommendations

Recommendations were considered with regard to aspects of the planning process, legal and administrative procedures, housing finance, and the building process. These are discussed below:

### The Planning Process

#### 1. Low/Moderate Income Housing Design

One allegation is that much informal housing is "overbuilt" relative to minimum essential structural requirements. If true, there may be a possibility to reduce costs by more careful design and materials usage. Technical assistance to builders in informal areas should be considered, as well as expansion of technical training of greater numbers of construction workers.

A somewhat different worry is that continuing pressures for vertical expansion and economizing on building materials may overstress existing structures, leading to structural disintegration and collapse. Again, technical assistance in informal areas and expansion of knowledge concerning appropriate materials and structural standards may be in order. This could be done, for example, as part of programs similar to the USAID Helwan Upgrading and Home Improvement Program or the upcoming Neighborhood Urban Services Program.

It is observed that interior facilities of informal housing are not terribly different from those of formal housing. Little or no action needs to be taken to improve designs per se.

When households are dissatisfied with their dwellings, it is most often because of lack of sufficient rooms. Again, little action is called for. New building and vertical expansion are occurring at high rates, enabling many households to reduce crowding burdens by moving or by expanding existing dwellings. Population trends toward somewhat smaller urban families should alleviate some of the crowding burden, and continued expansion of the housing stock with measures to hold down cost rises should also be of help, since lower unit costs of housing should lead naturally to increases in average size and quality of units. The most important cost element to bring under control is land costs since these are likely now to comprise the major share of new construction costs for housing in most areas of Cairo and much of Beni Suef city. This will require a vigorous combination of policies on both the supply and demand sides of the housing, land, and infrastructure markets (see "Housing Finance" below).

## 2. Provision of Infrastructure

This is the vital need of many informal areas. While areas are, in general, well served in Cairo, and becoming better served over time, there are a number of areas that are well below general levels of infrastructure access.<sup>1</sup> Residents of informal areas are aware of lack of infrastructure, and cite it as a key area of needed improvements for which, often, they express a willingness to pay.

The major problems here are the timing, financing, and placement of infrastructure. Regarding timing, there appears to be no compelling reason for providing infrastructure in advance of development, although there are arguments on both sides.<sup>2</sup> The present development pattern in informal areas

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<sup>1</sup>See Appendix 7 for a tabulation of infrastructure provision in sample enumeration districts.

<sup>2</sup>As part of the Cairo Land Development/Infrastructure Project benefits and costs of "urban infill" and peripheral development were estimated. Net costs and benefits provide no clear choice between these two options (See Dames and Moore, 1981, Appendix I). This is clearly an area for more research. Two sorts of activities appear to be called for--site-specific benefit-cost studies of upgrading vis-a-vis peripheral development and development of a series of parametric economic planning models that could be used to evaluate both specific and general alternatives.

matches the temporal patterns of income and savings of area residents. While some informal area residents may express dissatisfaction with areas as a result of low service levels, this is far from the rule. Indeed, a higher proportion of Cairo informal area residents claim to be "very satisfied" with their areas than do formal area residents. Putting in infrastructure after development may be economically more efficient than prior servicing of vacant areas. This can come about if more households can be served per LE of expenditure in denser, developed areas than in low-density developing areas. Moreover, not only might unit costs be lower but ability to recover costs would be higher since more households would be served per connection in denser, built-up areas than would be the case in fringe areas. Higher densities could be achieved either through vertical development or more efficient cluster development land use. While some downstream demolitions and marginally higher servicing costs could be offset by economies realized by servicing more households for a given level of expenditure and enhancing cost recovery prospects. It should be emphasized, however, that infill and upgrading, on the one hand, and peripheral expansion, on the other, are not mutually exclusive choices. What is at issue is a question of balance--of costs and benefits and of efficiency and equity issues.

Regarding infrastructure financing, costs do not appear to be recovered on any form of infrastructure (Wheaton, 1981). This limits the ability of systems to expand and maintain existing service levels. A significant fraction of surveyed households complained about infrastructure capacity and maintenance problems--power and water outages, and sewage backups. Moreover, it creates an inequitable and inefficient distribution of services. Nevertheless, it appears that the potential for increased cost recovery is great. Utility tariffs are currently a very modest fraction of incomes; consideration should be given to raising them. As important, the short supply of infrastructure may create (in part) large rents in the form of exorbitant land values in well-serviced areas.<sup>1</sup> The

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<sup>1</sup>Evidence on this point is, however, ambiguous. See, for example, the discussion concerning the determinants of land value (Table 8-4). More careful empirical research is needed to quantify the role of different elements of infrastructure in influencing land values.



government does little or nothing to capture these betterment related rents; despite the precedent for such a policy in other developing countries. Thus, two changes in the existing infrastructure pricing system should be considered--appropriate cost-based pricing and betterments taxation. Each could be used to generate funds for upgrading antiquated infrastructure in some areas and extending it to developing areas.

The placement of infrastructure should be guided by both equity and efficiency considerations. The basic needs of all households should be recognized without being limited by arbitrary distinctions between formal and informal areas. Current infrastructure shortfalls in Cairo and Beni Suef informal areas appear not only inequitable but also unnecessary as many informal area households appear to have both the inclination and the means to pay for infrastructure extensions. Efficiency considerations should involve proximity of needy areas to existing networks, density, and specific area problems of health and sanitation.

### Legal and Administrative Procedures

#### 1. Building Approval

Building approvals are largely not now obtained, with 80 percent or more of construction by the informal sector, nor in many cases do approvals seem necessary since informal housing tends to be not only similar to formal housing but as some allege, may even be overdesigned. An emergent problem, however, is that increased pressures to economize on materials and, at the same time, to increase densities, leads to potential structural problems. Allegations of new buildings falling down were heard frequently by interviewers. This suggests that stringent regulation of building height might be more appropriate than general regulation of building. Alternatively, a much more heavily targeted set of enforcement activities could be planned, focusing principally on those building types likely to provide greater health and safety risks such as high rises, those being built on poorly drained soil, in areas polluted by industrial waste, etc. The emphasis would be much more on avoiding catastrophic health and safety failures than is now the case.

Restrictions on agricultural land conversion are widely flouted; land changes hands quite freely. In Cairo, much of agricultural land now being urbanized is on the intensive margin--of enormously greater value as commercial, industrial or residential land than as agricultural land. Often agricultural land value has been eroded because of lack of irrigation, poor drainage, or industrial pollution of water supplies. Conversion is profitable and, in many cases, desirable.<sup>1</sup> Land being urbanized is generally accessible to infrastructure networks and thus not overly expensive to service. Consideration should be given to returning subdivision control in agricultural areas to the local level, particularly within the city cordone. It seems likely that inframarginal development on agricultural land is economically rational in many cases, but this determination should be made locally.

### Housing Finance

Judging from the overall level of performance of the housing sector, finance is in many respects adequate. Much of that finance derives from earnings of workers abroad, which are used to finance land purchases and construction; sales of property (common in agricultural fringe areas); sales of jewelry; and savings in informal credit associations (the latter being more often used to finance key money than land and building purchase or construction). Formal credit mechanisms are hardly used at all.

The main problem of housing finance is not the same as that in some other developing countries with alleged housing shortages (i.e., that the overall level of investment in housing is too low). In fact, given the recent supply-side related housing inflation, the desirability of further fueling the fires of housing inflation by large doses of unneeded credit is questionable. Rather, the problem is distributional--low income households just entering the housing market experience high and increasing housing burdens which they cannot escape by becoming homeowners. The transition to homeownership is difficult and becoming more difficult over time because housing costs are rising more rapidly than incomes. Also, households without access to repatriations are severely handicapped in competing in land and housing markets. Problems have been accentuated

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<sup>1</sup>This is suggested not only by the Dames and Moore Cairo Land Development/Infrastructure report (1981) but also in a carefully documented paper by Wheaton and Shishido (1978) which examines the economic rationale for Egypt's New Town policy.

recently because of the rise in the prevalence and level of key money as a housing cost component. While in previous years households could pay rents out of current incomes, the rise of key money now requires significant payments from assets, as well, which are steered toward higher income groups, thereby creating a serious distributional problem.

What is basically required is a set of policy mechanisms to bring housing costs to an affordable level. This can be done either on the demand side of the market, by providing subsidies to target group households to enable them to buy or rent at a fraction of market cost, or on the supply side, by attacking the causes of inflation in housing costs. Demand side policies could take the form of direct cash payments to households, providing housing "in-kind" with subsidized rents (as in the case of current public housing schemes), providing serviced land at a subsidized price (perhaps with a cross-subsidy from higher income groups or commercial land users), providing subsidies under the rubric of a savings mobilization plan with subsidized interest rates and either bonus payments or the granting of housing mortgages or materials loans for successful completion of a contract savings plan, or simply granting subsidized mortgages for land and/or buildings. All of these sorts of policies need to be considered, though by themselves they will do little to help the problem of continually rising housing costs.

Supply-side policies would aim at reducing prices of housing cost inputs by expanding their supply. Domestic capacity for building materials could be expanded, technical training of construction workers increased, and the supply of serviced land increased by large-scale public or private land development.<sup>1</sup> Despite such measures, a fundamental problem will remain --that land is seen as perhaps the easiest and best investment that can be made by persons with excess money such as repatriations from abroad. The investment demand for land which now exists, and which is heavily fueled by repatriated earnings, is likely to continue at a high level for years, continuing to inflate land prices beyond the means of most people.

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<sup>1</sup>Notwithstanding earlier recommendations concerning the importance of infill and upgrading, large-scale land development in urban areas in Egypt is a necessity to accommodate population growth, migration, and household mobility within cities. Such development will tend to reduce upward pressures on land costs though appear unlikely to reverse current trends.

Unless the government can either create attractive alternative investment opportunities, effectively tax away potential capital gains on land sales, or effectively prohibit private land transactions (e.g., by undertaking massive land banking or expropriations of nearly all developable urban land) land prices will continue to increase.<sup>1</sup> All of these actions should be considered. Harsh actions to directly control land prices would be the single most important thing that could be done to reduce the rate of increase or even reverse recent increases in housing costs.

In the interim, an alternative is to realize that the bulk of Cairo households are, and will continue to be, renters, and that encouraging support of private units built for rental occupancy is highly desirable. In fact, vertical expansion is the major current source of growth in Cairo's housing stock--and most of those units are for rental occupancy. Supporting the adding of stories or completion of unfinished work as called for in Article 15 of the 1981 Housing Law is a good idea at this time. Most such recent additions have been concentrated among relatively small (one to three story) buildings and as such are within the structural capacity of such buildings. This strategy, as opposed to one oriented toward encouraging homeownership on new plots may appear to be somewhat more regressive than one focusing directly on low income renters seeking to become homeowners, though it clearly provides more housing sooner (the owner has already sunk land costs and thus confronts only construction costs)--thus permitting lower cost to the end user.

Financing of owner-built housing could occur either formally (through cooperatives, commercial banks, or the housing bank) or by permitting legal payments of advance rent or key money. Such advance rent is recognized by the new 1981 housing law, although the law requires subsequent reductions in monthly rents within a stipulated time.

Of more critical importance than housing finance would appear to be finance of infrastructure extension and upgrading, each of which is currently underfunded. This is discussed above.

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<sup>1</sup> More explicit consideration should be given by USAID and GOE to examining the experience of other countries in controlling land prices and speculation through tax and other fiscal and planning mechanisms.

## The Building Process

### 1. Organization of the Construction Industry

At present, the informal construction sector is highly competitive, though subject to vagaries of fluctuations in materials and labor prices. There are occasional shortages in building materials and in skilled labor, though generally contractors who are willing to pay the going rate appear able to obtain sufficient quantities. The sector is highly productive as evidenced by its ability to produce from five to six times the number of formal sector housing units each year. Other studies have recommended expansion of technical training and domestic production of building materials. These are good ideas and deserve to be encouraged. Given that materials comprise some 70 to 90 percent of construction costs, the greatest leverage in reducing costs will come from reducing materials costs. Although the relative cost of construction labor increased greatly in the mid-1970s, labor intensive construction methods are still desirable. Moreover, it appears that rates of construction wage increase may recently have dropped somewhat from mid-1970 levels, further supporting a focus on materials cost reductions.<sup>1</sup>

In addition, it would seem appropriate to decouple the building material subsidy system and the building permit system. Abuses and inequities of the present system are apparent. Many well-off builders are alleged to seek building approvals for access to building materials-- which they subsequently sell. Even housing cooperatives are allegedly involved in this. It is manifestly clear that the current system is regressive both directly (in that it subsidizes better off households) and indirectly, in that it raises the price of materials to the informal sector.

Alternatives that should be considered include:

- Completely deregulate building materials markets;
- Target materials subsidies instead to owners/builders willing to build in designated locations, according to standard designs, or willing to rent to stipulated target group households.

### 2. Security of Tenure

This does not now seem to be a major problem--the informal sector is in some respects more willing to invest in housing than the formal

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<sup>1</sup>Recall, however, that total construction costs including costs of land may be dominated by land costs in many areas of Cairo and Beni Suef.

sector. The former includes a slightly higher proportion of owners, and a greater proportion of buildings with recent additions. Households do not appear to be concerned about failure to register land or buildings or to obtain building permits. When purchasers of existing buildings were asked why that had not made improvements, no-one ever mentioned concern with any aspect of security of tenure. Anecdotal evidence suggests that once households are established, it is difficult or impossible to dispossess them. Moreover, the government appears to routinely legitimate illegal settlements (e.g., Law 29). The only action that would appear warranted is to formally legitimate tenure (ownership) of illegal households, though the current system which permits disputed ownership to be litigated on a case-by-case basis may be preferable.

### 3. Zoning

Major zoning-like elements are height restrictions on buildings and prohibitions on conversions of agricultural land. The former should probably be more rigorously enforced because of problems of structural soundness, compatibility with infrastructure, and health and safety of tenants (problems were mentioned by interviewees with water pressure, sewage backups, etc.) Benefits of enforcing most other zoning like features of housing codes may be of less importance.

### 4. Appropriate Technologies and Materials

Technologies and materials vary within the current housing sector depending to a considerable degree on the ultimate height of residential buildings. Concern was expressed by a number of officials interviewed that building collapse had become, or was becoming, a potentially major problem. As discussed earlier, this is a believable concern given increases in relative construction costs and pressures (because of high land values) for higher density development. As discussed above, this problem is likely to be most serious in case of tall building development, and possibly in areas with soils with poor drainage. Governorate officials could focus concern on growing areas where either of these conditions is likely to be present and both offer technical assistance and enforcement personnel to ensure building safety. The emphasis should be on highly selective assistance and enforcement to take best advantage of resources.

## 5. Economic Incentives for Efficiency/Subsidy Policy

Subsidies are pervasive in the housing sector, principally encompassing building materials, infrastructure capital and operating costs, public sector housing, and rent control. These subsidies are sometimes regressive, inequitable, inefficient, and cause problems in financing the orderly expansion of housing opportunities and access by all citizens to basic infrastructure.

The analysis suggests that building materials subsidies tend to go to better-off households and probably raise the prices of unsubsidized materials for less well-off households. It is suggested that decoupling the building approval-material allocation process or modifying it would be a more equitable and efficient way of addressing housing needs.

Infrastructure tends to be withheld from informal areas for some time, being supplied instead to formal areas. It appears that costs of supplying infrastructure are probably not fully recovered either for initial capital investments or for continued operations. This benefits better off households and limits the ability to extend infrastructure to other areas. Consideration should be given to modifying infrastructure pricing policies and to implementing a scheme of taxation of increments in land value created by infrastructure investments. Each of these changes can result in improvements in the equity and efficiency with which infrastructure is distributed.

Public sector housing presently constitutes a modest (9 to 10 percent) component of the housing stock, although there are plans to greatly expand its role. The analysis indicates that standards of public housing and its construction costs are well above those of average housing units, particularly with regard to infrastructure supply.

Public sector housing (at least in the sample here) appears nevertheless to be more crowded in terms of persons per room than average market housing. Rents are well below market levels and further below levels needed to recover costs, indicating that subsidies are large and, by some criteria, inequitable. The analysis supports the recommendations of other studies that have suggested major modifications in public housing dwelling and infrastructure standards, and that have suggested changes in the way it is priced.

Newly built informal housing, relative to public sector housing, is of lower quality but is, nevertheless, of better quality than average units of the existing housing stock. Informal housing is no more crowded than existing housing. It is of better structural soundness than existing housing and has similar interior amenities (toilets, kitchens, etc.). Its residents are as satisfied with their dwellings as residents of formal public and private housing, although in light of lower levels of neighborhood amenities, are sometimes less satisfied with neighborhood conditions. As such, the informal housing sector represents an alternative to existing public sector housing that is deserving of greater public support, particularly with regard to infrastructure supply and upgrading. Policies that encourage upgrading of existing informal areas, expansion of individual informal buildings, and provision of infrastructure to new areas for sites and services type projects are recommended as important complementary projects.

Rent control, which has been uniformly criticized in other studies, is shown by this analysis to have a more limited impact in some respects than its detractors would suggest, although it does clearly have some distorting effects on the housing market. For example, (1) rent control does not appear to have had a major effect on rates of new construction--new construction in Cairo appears recently to have outstripped demand. Moreover, no shift of the population away from being renters toward ownership is perceived. Rental units are still being produced and, indeed, a slightly higher fraction of recent movers are renters than are households who have not recently moved. (2) Maintenance of existing buildings appears in some respects not to have been greatly affected by rent control. Residents of rent controlled units often assume the financial burden of maintenance themselves, at least for their own units, spending on average a sizeable fraction of income for this purpose. Whether such expenditures extend to common areas or not could not be ascertained in this study.<sup>1</sup>

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<sup>1</sup>The locational impacts of rent control were also not ascertained here. In a very crude sense, locational choices appear not to have been affected--recent movers, for example, are no further away from their workplaces than are households that moved some time ago. A more detailed investigation than has been attempted here could, however, reverse this impression.



Rent control does, however, have a highly differential impact on residents of long standing and recent movers. For the former, rent control has indeed kept rents low; in fact, it has on average resulted in lower current rents than rents at the time households moved into their units. For recent movers, however, rent control has been widely circumvented by the payment of key money. Key money has risen over time in both amount and incidence, such that recent movers may be effectively spending from two to three times the fraction of their incomes on rent as similar households that have not moved, and as importantly, are forced to rely on sources of assets rather than current income in acquiring housing.

Recent increases in rents have reached a point where further increases in rent or cost burdens (either in key money or monthly payments) appear unlikely to be sustained. In the short run both supply and demand side factors should limit relative increases in costs. Current vacancy rates and construction backlogs should dampen supply-side price increases and, on the demand side, comparatively high required expenditures on food (60-70 percent of income) limit the fraction of income than can possibly be allocated to housing. Thus, it is expected that rents for recent movers will tend to stabilize at between 20 and 30 percent of income, a rate double that of the current average, but in line with many other countries at similar stages of development.

In view of the apparent impacts (or lack of impacts) of rent control, its outright abolition does not appear to be called for. Modifications along the lines of the new housing law of 1981, which stipulate advance rent payments and permit higher nominal return on investment to landlords but which allow even higher rates of return than the 1981 law should be considered as a way of encouraging a tilt in housing supply toward more low and moderate income units. Production of such units will, however, be somewhat limited in the short run by demand factors (tenants incomes and ability to accumulate key money), such that modifications in the rent control law will have at best marginal impacts.

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APPENDIX 1

Determinants of Informal Housing Status Among Owners:  
Regression Coefficients

Determinants of Informal Housing Status Among Owners:  
Regression Coefficients

(Dependent Variable = 1 if Informal)  
(Standard Errors in Parentheses)

	<u>Cairo</u>		<u>Beni Suef</u>	
Medium growth	.04	(.12)	-.03	(.11)
High growth	.28**	(.13)	-.01	(.08)
Agricultural land	.31*	(.19)	-.03	(.09)
Desert land	-.69**	(.26)	.05	(.13)
Government partitioned	-.36**	(.13)	-.46**	(.10)
Private/coop partitioned	.12	(.12)	.01	(.06)
Middle/upper class	-.11	(.19)	.37**	(.14)
Popular/historic	.18	(.17)	-.02	(.06)
Built since 1976	-.11	(.18)	-.01	(.08)
Built 1971-1976	.13	(.15)	-.02	(.05)
Built 1960-1970	.04	(.11)	.06	(.04)
Stone exterior walls	-.08	(.15)	-.10*	(.06)
Elevator in building	-.18	(.36)	.01	(.15)
More than one stairway	-.22	(.18)	.03	(.04)
Two stories or less	.08	(.12)	.00	(.10)
Six stories or more	-.13	(.20)	-.01	(.22)
Log (units in building)	.03	(.08)	-.07	(.07)
Separate rooms	-.04	(.14)	.12*	(.07)
Shops	.02	(.09)	.05	(.06)
Good condition	.14	(.10)	.00	(.05)
Bad condition	-.19	(.12)	.03	(.04)
About to collapse	.10	(.26)	-.09	(.08)
Paved road	.22	(.15)	-.11	(.08)
Graded road	.01	(.10)	-.02	(.04)
On less than 3 m. road	.16	(.14)	-.00	(.04)
On greater than 8 m. road	.07	(.11)	.12*	(.07)
Constant	.47		1.00	
R <sup>2</sup>	.38		.49	
N	132		176	

Notes: \*\*Significant at the .05 level.  
\*Significant at the .10 level.

APPENDIX 2

Background Material on Case Study Areas:  
Shubra al-Kheima, Dar as-Salaam, and Beni Suef

Donna S. Wirt

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## APPENDIX 2

### Background Material on Case Study Areas: Shubra al-Kheima, Dar as-Salaam, and Beni Suef

#### 1. Introduction

The purpose of the case studies of informal housing areas within greater Cairo and Beni Suef is to identify and compare processes of land acquisition, informal housing and infrastructure provision within the context of urban development.

The following begins with a discussion of the methodology used in selecting case study areas and collecting data. Basic parameters of the case study areas are then sketched out, including population growth patterns, socio-economic characteristics, building activity, growth of industry and transportation, and the conversion of agricultural land.

The rest of the case study material has been incorporated into the main text.

#### 2. Methodology

##### 2.1 Selection of Case Study Areas

Criteria for selection were as follows:

- Areas should include a mix of formal and informal housing. e.g., housing that started as informal but was subsequently decreed formal, housing that is currently categorized as informal and housing that is categorized as formal but includes dwelling units that are informal. This mixture allows observation of the interaction of owners and renters in both informal and formal housing and their cooperation and collective efforts to acquire basic services in their communities.
- Areas should include several different types of informal housing which are situated in both legal and illegal subdivision in order to present a typology.

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- Areas should include a high percentage of dwelling owners because they control room and floor expansion and often become suppliers of additional dwellings and dwelling units of informal housing.
- Areas should contain a significant proportion of low- to lower- middle income level residents so that the supply process of limited income groups can be observed.
- Areas should illustrate both old and new physical development patterns in order to contrast informal development in a spatial context, e.g.,
  - a traditional pattern where informal development has been integrated by "fill-in" in vacant lot areas and extension has been primarily vertical.
  - new patterns which emerged on land which was completely vacant and where expansion has occurred both vertically and horizontally.
- Areas should have undergone major land use changes so that assumptions may be drawn regarding why residents chose to settle in the area, e.g. this relates to formal provision of infrastructure, social facilities, and employment which may have acted as pull factors attracting informal settlement. The problem of encroachment on agricultural land should be demonstrated in each area.
- Secondary data should be available on each area, e.g., maps, comprehensive socio-economic surveys, and architectural documentation, in order to profile characteristics of communities.

## 2.2 Areas Selected

Two areas were chosen in Cairo after numerous site visits to various informal areas throughout the city. These areas are the western part of Shubra al-Kheima and the main neighborhoods of Dar as-Salaam. Beni Suef officials identified six major neighborhoods of similar character in their city and these neighborhoods constitute the third case study area.



SHUBRA AL-KHEIMA (West Shubra al-Kheima Qism) N/S Growth Path

Boundaries:

West - Nile River

East - Manshe'it Horeya and edge of vacant agricultural parcel (No. 3 identified in Dames and Moore Land Use Study)

North - Village of Begam and Agricultural Edge

South - Ismailiya Canal

Characteristics:

High degree of informal building activity over the past 15 years; at least 85% of land was agricultural 20 years ago; a high proportion of the housing found in the area is informal, occupied by lower and lower-middle income groups; the types of housing present illustrate levels of informality and are found in various siting configurations which are not entirely dependent upon topographical limitations; community organization is strong. The development of the area was directly influenced by the location of industrial establishments and the installation of the Cairo/Alexandria Road; there has been gradual encroachment on agricultural land since 1950 as informal areas completely covered most vacant areas between the Ismailiya Canal and urban periphery; there is currently steady encroachment on agricultural land on the periphery; severe degradation of the environment, especially irrigation canals which traverse the area and lead into agricultural land.

DAR AS SALAAM (Ma'adi Qism) E/W Growth Path

Boundaries:

West - Agricultural land between the Nile Corniche and western edge of Dar as-Salaam.

East - Cairo/Helwan Railway

North - Mari Gurgis Neighborhood (previously Sidi al-Agami)

South - Agricultural land included in Gezirat es-Salaam was 'Assar an-Nabi

#### Characteristics:

High degree of informal building within the last 10 years; 80% or more of the area was agricultural or vacant 15 to 20 years ago; a high proportion of housing is informal and various levels of informality are present. The development of the area is exemplary of fragmental subdivision of agricultural and vacant land in an area where land values are already quite high and will continue to rise as a result of location within the Cairo metropolitan complex, the existence of the Nile Corniche as a major access road, and the continual development of high income housing along the Corniche and northern and eastern edges of Ma'adi.

Both areas include two community types: traditional rural village (Shubra al-Ballad in Shubra al-Kheima and the Mari Gurgis Neighborhood in Dar as-Salaam) and recent informal development. Shubra al-Kheima exemplifies the continual horizontal extension to and beyond the agricultural edge. Dar as-Salaam illustrates a situation in which horizontal extension has been slowed because of interface with upper-income areas.

#### BENI SUEF NEIGHBORHOOD

##### Boundaries:

The cordon of Beni Suef defined by the ring road around the city of Beni Suef.

##### Characteristics:

Informal housing has occurred on the periphery of Beni Suef and on agricultural areas between the periphery and the city core. The pattern of informal development can be described as disaggregate development of various agricultural parcels. The case study area of Beni Suef consists of all informal neighborhoods defined by city and governorate officials.

The situation of informal housing is very similar in both Beni Suef and Cairo; the major difference being that the specific characteristics of each city are unique. The urbanization of Cairo spurred the informal sector in the late 1960s and in Beni Suef informal housing became a phenomenon only in the early or mid-1970s. Because of the degree of

similarity in land acquisition, home construction, and informal infrastructure provision, the ensuing discussion will consist of an overview of the general process found in both cities. Differentiation is only made in defining the specific urban development characteristics of Cairo and Beni Suef.

### 2.3 Data Collection

Information gathered for the case study areas was obtained from maps, site visits, interviews with residents and contractors of the areas, interviews and discussions with public officials, and from previous studies which have provided relevant and useful socio-economic, physical, and legal information on the areas observed.

#### Maps:

Cairo - 1950 and 1978 maps at various scales were used to ascertain spatial growth of informal areas and street patterns characteristic of both old and recent informal neighborhoods. Current boundaries and the physical characteristics of areas were ascertained by integrating map information with that gained through site visits. Formal infrastructure provision was identified by maps from the Cairo Land Use/Infrastructure Development Study.

Beni Suef - Beni Suef officials provided current infrastructure maps and a map showing the location of informal settlements in their city. They also provided information on establishment of neighborhoods, the characteristics of owners, the growth of informal housing, and some planning approaches for directing residential development.

#### Site Visits:

Site visits were made to survey types of housing supplied and the physical condition of the housing stock, environmental and physical characteristics of neighborhoods, and the extent of current building activity.

## Interviews:

Field interviews were undertaken in each case area and people interviewed: homeowners and renters, contractors, local businessmen, community representatives, municipal and governorate officials. All contributed valuable information on the causes of informal housing, its evolution over the past decade, and what government policy should be regarding its continuation.

## Previous Studies:

Three studies served as valuable sources of information and provided a framework for investigating the informal housing sector:

Cairo Land Use/Infrastructure Development Study (Dames and Moore, 1981).

Housing and Community Upgrading for Low Income Egyptians  
(Joint Housing and Community Upgrading Team, 1977)

Socio-Economic Report on Proposed Service Areas:

Metered Water Service Connections Program (E.S. Parsons, 1980)

### 3. Development of the Case Study Areas

#### 3.1 Population Growth and Increased Building Activity

Non-site specific factors initiating the informal housing supply in the major cities of Egypt are those associated with the post-1950 urbanization and increased demand for nuclear-family dwelling units. The magnitude of the Cairo urbanization is almost beyond comparison with most other cities in the world. However, rural to urban migration intensified throughout Egypt between 1900 and 1960 during which time per capita cropped areas fell from 0.71 feddans to 0.39 feddans. Over that time period, Beni Suef, the governorate capital, experienced in-migration from nearby villages and agricultural areas (MOHR: 1977,p.21). Urbanization continued and gained momentum during the period between 1960 and 1976 as people continued to move to urban areas to gain access to social services and real or perceived employment opportunities. Table 1 shows population change in the qisms where the Cairo study areas are located and for the entire city of Beni Suef.

Table 1

Population Change During the Period from 1960 - 1976

	1960	1976	% Change
Shubra al-Kheima	101,000	394,000	290
Ma'adi	83,000	276,000	222
Beni Suef	79,000	118,000	49

Source: CAPMAS, 1976

Building activity increased in both cities from 1966 to 1976, during the peak urbanization years, and over 85% of all buildings in each city were categorized as residential (CAPMAS: 1976). Table 2 shows the increase in building activity during this period.

Table 2

Changes in Building Activity in Cairo and Beni Suef  
1966-1976

	Number of Buildings		Change		Average Annual Change	
	1966	1976	Number	%	Number	%
Cairo	237,890	290,007	52,117	21.9	5,044	2.1
Beni Suef	33,823	45,705	11,882	35.1	1,150	3.4

Source: CAPMAS, 1976

Maps illustrating 1950 land uses show Dar as-Salaam as agricultural fields and Shubra al-Kheima as being comprised of at least 85% agricultural with the sites of factories and the villages of Begam and Shubra al-Ballad as the only built-up areas. Corresponding 1978 maps show both areas as almost completely built-up. Virtually all Dar as-Salaam and at least 90% of the residential development in Shubra al-Kheima is informal.

The Beni Suef informal areas comprise at least 25 to 30% of all built-up areas within the city cordon. Map comparisons show only horizontal spatial growth so no accurate estimate can be made as to the actual number of dwelling units constructed in partially built up areas. Combined with the percentage population changes the map comparisons do give some indication that a high percentage of building activity shown in city-wide statistics has occurred in the case study areas and all other informal areas in Cairo. Beni Suef officials say the illegal to legal building ratio was 1:5 in 1976 and was 1.5:1 in 1980 (Beni Suef City Council: May, 1981).

The building boom of the late 1960s and 1970s was a response to the restricted supply of dwelling units: the shortage of rental units, degeneration of the existing housing stock, rent control, and lack of financing options for the majority of the people who need housing most. Informal building seemed to be one of the only ways an individual could obtain a place to live. Older residents in the study areas expanded their dwellings to accommodate the demand for rental units in the early 1970s. Home-builders in all areas learned very quickly that they could expand the investment in their homes by supplying rental units. Thus as demand was maintained informal builders became suppliers of dwelling units not only for themselves but for other residents of the cities in which they live. Many lower and middle-income families have joined in on this activity knowing that investment in a home may be the best defense against inflation.

### 3.2 Socio-Economic Characteristics of the Population

The majority of the people living in the Cairo study areas are not extremely poor, monthly incomes, however, average about LE 50 compared to area-wide medians of from LE80 to LE90 per month. Owners usually have marginally higher incomes than renters (ES Parsons: 1980, p. 13-B). Most heads of households are industrial workers, craftsmen, or clerical or service workers. In Shubra al-Kheima qism 64.9 percent have occupations within this category and in Ma'adi qism 69.1 percent (ES Parsons, B-57). In Shubra al-Kheima qism, .5 percent of the population have secondary occupations in retail and commercial stores. Many of the

respondents in Shubra al-Kheima said that they have shops in the ground floors of their homes in which they work parttime, or manage.

Average household size in both kisms is approximately 6, over 80 percent of households consist of nuclear families, over 90 percent of the owners of buildings own the land on which their houses are built, and 80 percent of the owners live in the building they own (CAPMAS, 1976). The percentage of residents living in a building from 1-10 years is 60 percent in Ma'adi qism and 57 percent in Shubra al-Kheima (Parsons, p.B-15). Residents who have lived in the same building from 10-20 years comprise from 20-26 percent of the population (ibid.). Most people moved to their neighborhoods because they claim to have "found available housing there" - 69.8 percent/Ma'adi qism and 59.3 percent/Shubra al-Kheima (Ibid. p.B-46).

Beni Suef neighborhoods have similar building and landowner characteristics but occupations differ, probably because of the different industrial/commercial composition of the city. Officials in Beni Suef say that a large number of the residents in informal neighborhoods are skilled and unskilled workers in construction. A substantial number having worked in the Gulf States are investing their savings in building their own homes.

### 3.3 Industrial and Transport Improvement and the Conversion of Agricultural Land

The development of industry and the extension of the north/south transportation routes greatly influenced the conversion of agricultural land to residential use in Cairo.

In the early 1900s the city tram system was extended to Shubra al-Kheima and a station established north of Shubra al-Ballad, the largest village in the southwestern part of what was then a rural district.

By the post-war period numerous textile factories had been established providing employment for city residents and in-migrants. Although many of the factories were situated along the Nile bank where major electric companies had been established, a substantial portion were located along the N/S part of the Buleqiya Canal. Power lines were installed to accommodate these factories and later extended across the northern periphery to the edge of the Ismailiya Canal where maritime-related companies were subsequently established.

During and after the nationalization period public housing estates and accompanying social facilities such as schools were forthcoming. As industrial growth continued Shubra al-Kheima was transformed into what is today, along with Helwan, a major industrial center in Egypt and the Arab World, including 346 private and publicly-owned factories (Waterbury: 1973,p.13).

The positive effects generated by industrial development were upgrading of peripheral roads like the Cairo/Alexandria route (N/S) and the Ismailiya road (E/W) and provision of water mains and power lines throughout the area. The major negative externality of industrial growth was continued contamination of irrigation canals and a decline in agricultural land use.

Shubra al-Kheima was extremely attractive as a place for conversion of agricultural to residential land use. Its farms were traversed by irrigation canals, old agricultural tracts provided access, and groundwater could easily be obtained by pump installation. Consequently, when demand for housing accelerated in the 1960s, Shubra al-Kheima was considered a highly desirable area and land prices remained low enough to enable lower- and middle-income citizens to build their own homes. Farmers anticipated the building boom and began subdividing feddans into small plots primarily in the area of Ezbet Osman.

By the mid-1970s density increased and government standpipes were installed. The industrial waste and garbage generated by residential areas destroyed the water quality of the canals furthering the agricultural-to-residential land use trend until the study area within Shubra al-Kheima was almost completely transformed into an industrial suburb of Cairo.

With the exception of Sidi al-'Agami, Dar as-Salaam was exclusively an agricultural area during the arly 1900s. During the second World War the establishment of Ma'adi and Helwan as residential areas and the development of industry along the al-Khashab Canal and in Helwan attracted laborers to southern Cairo. The Dar as-Salaam Railway Station, main area station of the Cairo/Helwan Railroad, provided transportation for workers from other parts of the city to the ash-Shabrawishi Perfume Factory and the al-Fayyum Weaving Factory which were situated on what is today the northern boundary of the Dar as-Salaam study area.



After the construction of the Nile Corniche began, the al-Khashab irrigation canal was blocked, rendering most cultivated areas non-productive. Only the wealthier farmers could afford mechanized pumps required for cultivation. This event resulted in the government declaring the land "non-cultivable" and large landholders contracted engineers to subdivide the land for residential development. At that time, in the 1930s, regulations stipulated 6 meters minimum street widths and lots were sold for 45 pt. per Sq.M. Land prices attracted an influx of people and residential development began.

The enactment of the Law 52 of 1940 resulted in official enforcement of minimum 10 meter street width. The resulting displacement of some residents culminated in a controversy in the courts. The homebuilders emerged victoriously from the battle and stayed on their land.

Dar as-Salaam and adjacent areas went for 15 subsequent years without on-site drinking water provision with the exception of one or two public taps. The introduction of upper-income residential buildings on the Nile Corniche resulted in the provision of piped water and the extension of water mains to those buildings. These mains were subsequently accessed by residents of informal areas to provide drinking water for Dar Salaam. Even after water became generally available individuals have had to wait from 10 to 15 years for connections.

Sewerage was introduced to the ash-Shabrawishi Factory but could not be extended underneath the Cairo/Helwan Railway because of prohibitive costs.

Land prices remained low through the late 1960s and early seventies and much of the informal building occurred during this period. Many informal builders in Dar As Salaam became intermediate level suppliers for builders around Ma'adi. The increased value of the Corniche and North Ma'adi areas raised land prices and thus restricted the lower-income building group within the borders of the study area. As a result, many homeowners in that area have begun to vertically extend their homes rather than channelling investment into land.

APPENDIX 3

Kafr el-Gabal Community Study

Safia Mqhsen

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## 1. Introduction

Much of the information for this community study was obtained through observation and discussions with groups consisting of both contractors and owner/builders. These discussions provided comments on the construction industry in general and on the way it operates in this area in particular.

## 2. The Growth of the Community

The community of Kafr el-Gabal is located on the Mansuriya Canal off the Pyramids Road and less than half a mile from the pyramids. Despite its location in the middle of the tourist area, the community has a decidedly rural atmosphere, with unpaved roads, a daily street market and rural style houses. On the other hand, signs of active housing construction are visible everywhere, and new four and five-story buildings are beginning to obstruct the view of the pyramids of the one-story older structures.

Kafr el-Gabal resembles other localities with high concentrations of informal housing in ways that seem to reflect the scale of construction activities in this sector, notably in the reliance on personal trust and social networks as the basis for much of the transactions carried out between participants in the industry. But it differs from other such localities due to specific locational characteristics. For example, proximity to the Pyramids, Egypt's primary tourist attraction, has attracted rural migrants who come to Kafr el-Gabal, sometimes from as far away as Fayyum and Beni Suef, seeking jobs in tourist-related activities and become employed as camel drivers, horse trainers, or as helpers in shops that cater to the tourist trade.

The large number of rural migrants has created a rising demand for cheap rental units, usually single rooms. Monthly rental values of a small room in a village-type house with no facilities have increased from three pounds in 1977 to current prices varying from seven to ten pounds. Despite the general distaste on the part of the original local inhabitants toward renting rooms to strangers, many of them have nevertheless taken advantage of this demand to add rooms to their present houses for rental purposes.

The demand for rural migrants for housing does not, however, explain the accelerated pace of housing construction in the locality. Here the answer lies partly in the movement of Cairenes, increasingly driven out of

the urban housing market by high prices of land in Cairo proper, who have discovered in Kafr el-Gabal an area that combines accessibility to downtown Cairo with relatively affordable land prices. These prices are rising--LE50-70 m<sup>2</sup> as compared with LE 2-3 in 1974--but still remain substantially below those of surrounding areas. Among the factors limiting the rise of land prices in Kafr el-Gabal are its lack of municipal water and sewage systems, with the exception of mosques, which are provided with public water. Electricity is generally available. For fees, varying with the distance from the main water line, individual owners can obtain connections to the mosque's water line. But the high cost of these connections has made it economically infeasible for all but a few of the new multi-story houses on or near the water lines. Even then, the unreliable water supply during the day for these lines has made it necessary for owners of such buildings to have supplemental sources of water. The rest of the houses in the area rely on private, shared or public pumps as a source of water. Until recently most of the pumps used were the old-style, drilled to a depth of only 5-7 meters. But as underground water supply on this level is becoming increasingly polluted with sewage and other impurities, many owners are now drilling to 25-30 meter levels. This increased the cost of a water pump from LE 70 to LE 300.

Although the large and conspicuous new construction in Kafr el-Gabal is by migrating Cairenes, the greater volume of construction activity in the locality is actually by "old residents" (either as a response to current and anticipated family needs, or for rental purpose). As incomes of local families have increased, resulting from either employment in tourist-related jobs or in the Arab countries, or from sales of agricultural land to developers and new owner/builders, these old families have sought to improve or enlarge their houses or replace them with more modern structures. Often this meant changes in style, from the old expansive one-story houses with central courtyard and surrounding rooms, to two-story brick houses situated on a smaller lot.

Of the three populations--old residents, incoming rural migrants, mobile Cairenes--it is the old resident category that is most involved in the demand side of informal housing construction in Kafr el-Gabal. It is also from among these local residents that most contractors and suppliers of materials for informal construction come.

### 3. Informality

Despite recent legislation outlawing new construction on agricultural land, this continues to be a conspicuous characteristic of the locality--house lots interspersed with cultivated plots. Many former agricultural plots now support partly finished buildings, often mere skeletal structures. This, say local residents, is a direct result of the new legislation which exempts construction already started from the prohibition against conversion of agricultural land. Thus residents with intentions to build or sell their land for housing have hastened to construct foundations of buildings before surveys of the area are taken.

If building on agricultural land is the most visible form of "informal" construction, the most frequent form is simply building without a permit. According to contractors interviewed, as much as eighty percent of their current customers are building without permits. It should be emphasized that these contractors were small-scale operators largely serving local residents. Their explanations for the phenomenon were based on simple economics. Counting survey and design fees, a building permit costs in excess of LE 350. Even after taking into consideration the subsidized prices of building materials available to those with permits, the difference in cost of materials at black market prices will be less than the cost of obtaining a permit. "The quantities used (or materials) by most people here are too small to make the difference worthwhile," said one owner-builder. Making matters worse, delays and red tape in the issue of the permits and in the delivery of the materials convince the local builders of the correctness of their "alternate strategy." "Permits are for the big people and those who can afford to 'sprinkle' (yerush) their way through government offices. For us poor people it is the 'come-back-tomorrow' routine for months," said another owner who is currently building without a permit. "Outsiders need to have permits. They are not from the area and are afraid someone might inform on them. For us, we are one big family and no one is going to inform on his neighbors and friends. Besides, outsiders are building big houses. They get enough materials on their permits to compensate for all the expenses . . . ."

This is not to say that no violations of government rules and regulations are committed by outsiders. Very few, if any, build strictly according

to the specifications according to which permits are issued. According to local claims, they submit specifications inflating the dimensions of the building to be constructed in order to qualify for a greater quantity of subsidized materials than needed, selling the surplus in the black market to offset part of the cost construction. This is said to constitute a major source of materials for construction in the informal sector.

Neither owners nor contractors see any substantial risk in ignoring some of the building regulations. Old residents belittle the risk because they consider the probability of their being caught to be very low. But even new residents, incoming Cairenes, regard the risks as low because of their ability to manipulate the system if they get caught. This manipulative power is not just assumed. Local people point out a multi-storied building near completion which protrudes three meters into the main road. Although construction was held up for several months when the violation was discovered, activity has suddenly resumed and permission to rent has been granted. Rumors have it that the owner bribed key persons to get a "conditional" permit, according to which the building may be completed and rented but if future plans for widening the road go into effect, the protruding parts will have to be dismantled. Almost everyone spoken to is sure that any future plans for the road will not include the area on which the violating structure is built.

#### 4. Labor Supply

The attraction of the area to rural migrants has provided the construction industry with an ample supply of labor. Failing to find employment in the already saturated tourist industry, many migrants seek work in the other boom industry in the area--construction. They gather near the bridge on the Mansouria Canal and wait for builders and contractors to hire them. These workers for the most part are unskilled (Fa'il). As to the semi-skilled and skilled labor, there exists an acute shortage that has pushed the daily wages of these categories of workers to record highs (LE 5-7 for semi-skilled workers and LE 7-10 for skilled workers). Even among unskilled workers, the glut created by migration from the rural areas has not solved one problem for some builders. Most of those interviewed maintained that labor was the most serious problem in the construction industry today. Despite the relatively

high wages of the unskilled workers (minimum of LE 3 a day plus lunch) many of these migrants require constant supervision. "I came back from Sabtiya the other day," said one contractor, "and found the sons of dogs sleeping. I still had to pay them. If I didn't and the word spreads around that I don't pay the workers, I wouldn't find a single man to work for me."

##### 5. Social Networks

Sociologically, the most distinguishing characteristic of the informal housing industry in Kafr el-Gabal is the way in which traditional social networks are utilized to channel transactions within the industry. The area's three most powerful families--el-Batran, Abu Saliba and Gabr--seem to dominate a major segment of the supply activities in the informal housing in the area.

El-Batran is by far the most influential of the three families. The family moved into the area in the early part of the 19th century and, like many other tribal groupings in other parts of the country, were given control of large tracts of marginal lands. This included what is now Kafr el-Gabal and the surrounding communities of Kafr el-Batran and Kafr el-Manfi. Most of the agricultural land was used for vegetable and fruit cultivation. Proximity to the center of the urban area had made marketing of produce feasible, and most of the population of the area were involved in farming. But the basin system of irrigation applied to the area until 1936 limited the expansion of housing to those areas above the flood level. When the perennial irrigation system was introduced in 1936, and at the same time right of full ownership of land was granted to the landholders, the Batran family reacted by dividing their land and eventually selling parts of it, mostly to landless cultivators living in and around the area. The Batran family became wealthy through these sales, but the wealthiest among them are those who have kept large parcels of land and are now selling them at current prices. With wealth has come leadership both with respect to the old political structures (they were and are the 'omdas) as well as the new (they are prominently represented in the political councils).

The Abu Saliba family, like el-Batran, was granted land by the government. However, their land holdings were mostly on the periphery adjacent to and including desert land. They are currently using the remainder of their land holdings as quarries and with them control the supply of sand, pebbles and lime to the construction projects in the area and the surrounding communities.

The Gabr family is not usually regarded as connected with large land holdings. Having acquired most of their land piecemeal through early purchases of small parcels from the Batran family, they have been active farmers until the construction boom attracted many of them to engage as retail suppliers or as small-scale building or labor contractors. It is through the Gabr family that most construction activities in Kafr el-Gabal's informal sector are carried out.

This is not to say that the above division of labor among the local families is strict. A few members of el-Batran family are involved in the supply of more expensive building material such as iron for reinforced concrete structures. This however, is utilized more in the larger "formal" projects than in the informal housing sector. Nor is the area closed to outside contractors and suppliers. But most of these, again, are involved mostly in the construction of the newer buildings.

#### 6. Marketing and Finance

Traditional social networks also play an important role in regulating activities within the industry itself. Customers in the informal sector are recruited mainly through personal contacts, and credit is extended on the basis of personal trust rather than on financial credit ratings; and payment is guaranteed more by social pressures than by tangible collateral. Markups for materials and on labor supplied on credit are not determined by interest rates in the money market as much as by a "traditional" scale regardless of the supply and demand factors. It is interesting to note that almost all contractors and suppliers interviewed have set that scale at approximately five percent, while owner/builders claim a much higher rate. For example they claim that a square meter of concrete flooring costs them LE 50 (materials and labor) if paid cash, but LE 70 if done in credit. This lack of agreement is understandable in view of the ambiguity that accompanies such informal credit arrangements. The terms of payment as well as the length of time are often vaguely defined. A "pay when you can" arrangement makes it difficult to calculate the rate of interest.

In the informal sector of the housing industry in Kafr el-Gabal, credit financing plays a minimal role. People do not decide on the need to



build and then seek financing. Rather, they find themselves with unaccustomed wealth and then determine to apply it toward housebuilding or renovations. Moreover, their attitudes toward debt are such that they prefer to build in stages rather than incur sizable debts. The preference for cash sales is shared by the contractors and suppliers, who see transactions entirely on credit as least desirable, and those for cash as most desirable. "We don't have extra money to tie up in credit," said one supplier. Yet due to inaccurate estimates, unforeseen costs or price changes, the need for credit frequently arises. Since they are not accustomed to dealing with banks, which they consider too impersonal, owner/builders go to relatives or get into a gam'iyya to raise the needed funds. In some cases, however, they seek the contractor or supplier for credit, thus establishing the supplier-client relationship as a new link in a community social structure already clearly defined, with power acknowledged and deference accorded to the few important families who tend to monopolize the supply business in the informal construction sector in Kafr el-Gabal. The inequality of their stature serves to ensure that such casually offered credit will be seriously treated by the client.

### Three Participants

#### 1. HAJJ BADR EL-GABBAN (Abu-Gabr)

Age: 50. Married 30 sons (29, 25, 19), 2 daughters both married, one to government employee, one to cook, Cairo hotel. Area or activity: retail supplier of cement, owner of tile factor both retails and wholesales tiles, carpentry workshop for windows.

I have been in the construction business for more than 12 years. My father was a farmer. We owned a small piece of land, and had a flour mill in the village. When he died I inherited the land, but the mill wasn't doing so well. Maize yields in the area had dropped and the mill was our major source of income and wasn't making any money. People are simply not cultivating their lands any more; they are too busy doing other things--selling their lands to builders or getting jobs in the Arab countries. I sold a piece of land and opened a small retail outlet for paint and painting materials in the mill, after I failed to sell the mill. Then I added cement, small scale sales, a few bags here. When I got enough money I bought three machines for tile, opened a tile factory (small) in the mill. Finally I opened the carpentry workshop.

I have three sons, all with high school diplomas, but all work for me. Each is in charge of one of my operations. My oldest is in charge of the cement and paint. My second takes care of the tile factory, in charge of production and distribution and deals directly with customers, no middle-man--we can't afford it. It is only a small factory, so our customers are mostly from right around here. Half of our sales are wholesale. My third son was in charge of the carpentry shop until he joined the army last year. I had to rent the shop out to a local person, who rents the machines, the place and the name so it is still known as Badr Gabban's workshop. We make sure that the man who rents it treats our old customers well.

I like to have my hand in more than one area of supply. The market is always changing and the situation with regard to each material varies from month to month. Carpentry, for example, was very profitable until a year ago, when the price of labor increased sharply and the type of skilled workers became hard to find. The shop started to lose money. It was hardly breaking even when we rented it out. Not just any worker can be trained in this type of carpentry. A lot of the work is hand work. These are the most expensive workers to find, since they go for furniture manufacture in Arab countries. The tile business is the most profitable now. (He refused to tell margin of profit.) Machines are relatively inexpensive. Actually it is on a big machine with three interchangeable parts. It cost me LE 1,000 three years ago. It's a simple machine and doesn't require maintenance. I get my monthly allocation of subsidized cement from the government and it's enough. I don't need black market cement. I don't know how long this will last. There are too many people now getting into the business. It doesn't require much skill and the workers work on commission.

I do not like to give any work on credit, but once in a while you have to. If a man bought a lot of material and just needs a little to complete the work and doesn't have the money, then you give him what he needs and he pays when he can. The reason I don't give credit is because I need my money to buy materials, so I can't afford to tie it up in credit. Lately it's becoming so competitive that you sometimes have to give credit. The rate charged here is about 5-7% for credit given. Nobody gives long-term credit. Sometimes the debtor will have the money in a few days, in other cases, after a few months. No, the rate doesn't vary with the time taken to repay. Time is never fixed. There is a reasonable period, though, which usually does not

exceed a year no matter what the amount. Extending credit needs wes'a (wealth). People in the business here classify sales into three types: be'ia bida (white cash); be'ia balga (grey sale--half cash); and be'ia soda (black sale--all credit). Nobody likes the last kind. Owners don't like to buy on credit; they get money, sell land, if not enough they sell their wives' jewelry. People don't build for the sake of building but for their future.

I expect the construction activity to continue in the area forever. The population is going to increase, and tourist activities will never decline, so construction activity will just keep expanding. There will, of course, be changes in each aspect of construction, which is why diversification is a smart thing. A smart man can make a good living in construction for as long as he wants. I have not heard of anyone going broke in construction in this area.

Most suppliers and builders in this area are sons of the area. It is difficult for an outsider to establish himself in business here. No one is going to leave his neighbor and give his business to an outsider. People don't trust outsiders, and they would lose face by leaving their neighbors. But there are outsider contractors . . . they are doing the big jobs. But in the small jobs that people like me handle, no. Large scale operations require a lot of capital, more than we locals can handle. For example, steel/iron is almost monopolized by outsiders. The biggest supplier here is Bait el-Garhy from Fayyum. They were originally dealers of scrap metal. I employ six workers on a permanent retainer. Three are my nephews, one is my cousin, one is a son of a friend, and one is an outsider. If I don't use them on a certain day, I have to pay them. Most of the tile work is to order, so we don't stockpile. We don't concern ourselves with markets. The workers are paid on commission. It varies. Some jobs require more skill than others.

## 2. FATHI GABR

Age: 35. Married 3 children (2 male, 1 female) (9 years to 7 months).  
Education: No formal schooling, reads and writes. Specialty: Carpentry for pouring concrete, general builder for small jobs, i.e., one story traditional houses, modeling.

Started out as a carpenter's helper age 10, worked for local carpenter doing concrete work for al-Maza Airport project. I was supporting

my mother and two sisters after my father died. It wasn't unusual to start working at the age of 10. It was the right age to learn a skill if you weren't going for an education, and I wasn't. I learned the trade fast, and in less than 8 years, I had a good reputation as a carpenter. I was getting small jobs on the side, too. I continued to work for contractors, building the frames for one job and while the concrete was drying I would do another job. I started my own business in 1970 with an initial capital of LE 350. I bought 10 m<sup>3</sup> of lumber, accepted only the jobs I could do myself with one or two assistants. While the concrete dried on my own work, I'd hire out as a carpenter on bigger jobs. Now a lot of my business comes from small jobs, like adding a room or two, or building a small one-story place. I can do the traditional houses, rooms around a courtyard and a latrine. I also do a lot of repair jobs--a wall falling, a roof sagging, or someone wanting to replace a beam ceiling with concrete. My work on frames for reinforced concrete is mostly for the new multi-floor buildings for big contractors. I only handle that one aspect of the construction as a subcontractor.

I don't handle other forms of carpentry, e.g., windows or doors. This requires different skills, and needs large capital to buy the machinery and materials. In my business, I don't need expensive machines. And I use a cheap grade of lumber. I frequently buy used lumber. If I am asked to replace a wood roof with a concrete one, I select from old lumber what I can use to defray costs. I use the beams for scaffolding and the "one-inch" for frames. I usually get it very cheaply.

Lumber is the most important material in my business. I get the new lumber I need from a distributor in Sabtiyya. I've dealt with him since I started my own business. I knew him when I was working for the contractor on the el-Maza project. No, I don't shop around. There is no sense. The prices are pretty standard, so it isn't worth the effort. On the other hand, if you are a regular customer of one supplier, you are sure he won't cheat you and will give better quality material. When there is a shortage in a given item, you get preferential treatment. And if he doesn't have it, he will find it for you. If you don't have the full cost, he will give you the material and wait until you get the money from your customer. As for the other materials I need to do the remodeling and other small jobs, there is no problem. I rarely buy them myself. In 90% of these small jobs I get,

the owners buy their own materials, then come to me and tell me what they want done, show me the design. Then we go to the place and I tell them whether the design is workable. If he doesn't have a design I suggest something. These are usually simple, straight-forward jobs, and the styles are standard. Then I tell him what material he needs and how much--how many bags of cement truckloads or bricks, how much sand, gypsum, etc.

An average apartment is 120 m<sup>2</sup>. That takes 3 truckloads of bricks (6,000). I hire masonry workers, who work either on a daily basis or by the truckload (LE 15 per truckload or LE 7/day).

If the owner has a supplier in mind, fine. Otherwise, I suggest a local supplier. It isn't worth it for me to buy the material, since for that volume I have to spend the same as my customer, with no profit margin. Anyway, these distributors do not deliver, so I have to use my pickup truck to get the material. My capital is around LE 15,000, mostly in lumber. I make most of my money from masna'aya (workmanship), mine and my workers'. For concrete floors, I get LE 12/m<sup>2</sup> plus the cost of materials. That is if the owner provides the materials. The masonry workers get LE 5/day extra for each floor added (climbing pay).

My first two customers, I sort of stole from my cousin, who is also in the business. I offered a lower estimate than my cousin. I didn't make any money, but I was establishing my reputation. Most of my clientele I get through personal contacts and from previous customers and friends. I am the captain of the local soccer team, and everybody here and around here knows me. That helps in getting customers. I don't get customers through relatives, because we are all in the same business. Once in a while, I extend credit. Mostly when I buy the materials myself. But I can't afford to tie up too much money that way. Usually I only give credit for about 50% of the cost. And the terms are very flexible. Whenever my customer gets some money, he brings me some. Sometimes this is difficult and there is nothing you can do. What do you do if his wife has a baby or his kids are sick? We know each other well around here, and no one tries to cheat me. When I feel that customer has the money and is buying a TV instead of paying me, I go to him or one of his relatives and they put pressure on him. But that doesn't happen very often. My average size job is about LE 3,000. I make a net profit if I don't provide materials of LE 275. If I provide the materials maybe an additional LE 50, or so profit. If I give credit, the

markup is around 5%. This doesn't vary at all; it's what people expect. It has nothing to do with the costs or scarcity of the items. It isn't really that low, since the payment usually comes in a relatively short time. People around here don't like to be in debt. They like to feel that the house is theirs and paid for. Few would buy something they can't afford. Many build in stages. When they have the money, maybe from working in the Arab countries, they finish the first floor, then wait till they accumulate more money to start construction again to expand and so forth.

Rental property is becoming popular in the area, but the vast majority are building to fit their own family's needs. Even the multi-family houses you see going up now are usually built by two or three brothers who inherited a piece of property or some money. Now each has his own family. They buy a few more meters if they can, and ask me to demolish the old structure and build a two-story house so that each can have a floor. If they have extra rooms, they rent them. Rental property is increasing and the renters are mostly outsiders.

Eighty percent of the people around here build without permits. It costs LE 350 - LE 500 to get the necessary steps and paper done. And since they don't need much of the subsidized material, most people just don't bother. Also they have to pay insurance on the building. There is no liability for a contractor who works on a job without a permit--that's the responsibility of the owner. But I have to be careful, because if someone informs on the owner, and the construction is stopped, everything on the site is impounded, including my equipment which would put me out of business.

My major problem is labor. The workers sit near the bridge and name their prices. They are the p-shas of today; they know they are in demand. Labor quality is a major problem. The workers need constant supervision. Usually the owner does most of the supervision, but it is my reputation. If the owner can't supervise, I get one of my relatives. Otherwise they will just sleep on the job. I came back the other day from Sabtiyya and found the sons of dogs sleeping. I still had to pay them. Otherwise, the word would spread around and I would not be able to find a simple man to work for me. I have two carpenters and three helpers on my permanent payroll. I pay LE 5/day for the carpenter and LE 3/day for the helper, plus lunch. If a

customer is in a hurry and they work longer days, I pay them extra and charge the customer. I have had them working regularly for the past year. My problem is that I have to take them green with no experience, and once they are trained they find jobs in Libya or Saudi Arabia, so I am always left with people less than fully skilled. Three of the people I have right now were found around here--distant relatives. The others came from Fayyum three years ago looking for jobs; now they have their families living here permanently. For larger jobs I get additional labor from the bridge. I pay LE 4 for the semi-skilled and LE 3 for unskilled. For masonry work I just hire for the job. Larger contractors have sizable work forces on permanent call, since they have jobs all the time and can afford large labor forces. When they are not actually working they get half their daily rates.

I don't like to buy on credit. But sometimes when I have a big job I get an extended payment until I sell the material. This is pretty standard around here. But I am not a big contractor and relatively new in the business and still building my reputation. So I don't want to find myself too much in debt. So I just take the jobs I can handle without borrowing much. I have never considered borrowing from a bank. Banks don't lend to people like me. They might lend to the owner, who has collateral. But all I have is my tools. People around here do not deal with banks . . . among the more than 3,000 customers I have had contact with, only 3 had loans from the bank.

Building a concrete roof, of say  $150 \text{ m}^2$ , requires an average of 20 days to finish. One day to get the wood to the site. Five to seven days to erect the wood scaffolding. Pouring concrete, one day. Eight to ten days for the concrete to dry. Dismantling the scaffolding, one or two days.

Outside builders who do the big buildings benefit from the subsidized materials. Usually they exaggerate the dimensions of the building to qualify for more materials, then sell the surplus in the black market. For examples, they can sell a ton of Portland cement which they pay LE 32 for LE 35.

### 3. NAGUIB

Age: 29. Married, 2 small children. Works Hotel Zamalek, his brother waits on tables same hotel. He is rebuilding his house along with his brother, from old style 6-room to 2-story brick house--4 rooms to each floor--each to be occupied by one brother's family.

My father was a farmer. When he died he left us a small plot which we sold to outfit my two sisters when they got married. And he left us the house. When we got some money, my brother and I decided to rebuild the house so we both could live there. Now I am renting from my father-in-law. Our house is built on 200 m<sup>2</sup> of land. We also own the small lot next to ours (100 m<sup>2</sup>) which we bought twelve years ago for 50 piasters/m. It was agricultural land. Combined, the 300 m<sup>2</sup> are enough for two houses. At the beginning, my brother insisted on building another old style house, spread out. He likes the idea of an interior courtyard, so the women can raise chickens and do all their activity in privacy. But that is wasteful. Nobody does this now, when the square meter of land is LE 50. So I convinced him to divide the land into two lots, built a two-story house for both of us on half of it. I think my brother was afraid if we didn't build on all of the land somebody else would, and challenge our ownership, because we had never got around to registering it. We just never thought there was a need. Everyone around here knows the land is ours; it is inconceivable that any neighbor would take it over. But to make my brother feel better, we are now registering the land--we started the procedure six months ago and it is still not final. When we went, they asked for the sale contract and ownership papers. We didn't know where to find them. We had to wait three months for the surveyor to come and measure the land. There were fees here, bribes there . . . I think it's all a waste of time. But maybe my brother is right, and times have changed and you can't trust people any more.

We don't have public sewage or water here. Only the mosque has water. We are about 200 m from the mosque's water line. It costs LE 6/m to get the extension (LE 1,200). We are now using the public faucet, about 100 m from here. But we plan to have our own pump in the new house, which will cost about LE 300.

A few years ago this was a village. Most people were farming. Now it has become a city, with electricity. People have lots of money. Many work in hotels. We have a reputation of producing the best chefs. In the Sheraton and other big hotels the chefs come from here. Many are using their money to rebuild their houses. Most own the land, only need money for construction. I did not get a permit. It isn't worth it to me. After all the effort and running around and all the cost, what do I get for it?



There is no risk involved. The land is ours and nobody is ever going to challenge or report on us. What if they do?

We are having a contractor--Fathi Gabr--to do the construction for us. We have known him all our lives; we grew up together, and he played soccer with my brother. I played with his younger brother. We never considered going to an outsider. No one does this if he knows somebody. Somebody you know, if you run out of money, he will understand. An outsider will not. In such a case you could lose your land. Also, somebody from here, if you change your mind, he will be flexible and agreeable to make the changes. He will also find ways to reduce your costs of building. For example, Fathi agreed that we could work as his helpers, which meant he would need only two other assistants. We also do all the supervision of the workers. We plan to have one of us present with them all the time. It just means we have to take the time off from work.

We got an estimate of the cost of building--LE 5,000. My brother and I together have saved LE 3,000. It took us five years to save that much. I have two jobs and I get a combined monthly income of LE 100. I live free and my wife has chickens and ducks to reduce the cost of food. We do not intend to borrow money. We'll build one floor, live in it until we have enough for the second floor. By that time, the children will have grown up and we'll need the extra room. Now one floor is enough for the two families. We are really building for the future of the children, so that when they grow up they can live here. We may rent the extra rooms until the children need the space. I have never thought of going to the bank. No one here deals with banks except maybe the big contractors and suppliers. I saved my money in the post office savings account, but this is not really a bank. I have no intention of using the gam'iya. You don't use it for big items like building a house. It's useful for emergencies or if you run short of money right before you finish construction, but nothing big. Around here it is mostly used to buy appliances and things like that. Not for construction. I don't intend to go into debt just to build a house. I can take my time.

I thought of going to the Arab countries to work, and I had an offer. This is the way most people around here get money to build. But I can't leave the country now because I haven't finished my military service. And my wife doesn't want me to leave her and the children, even though she can

stay with her family. I may do it later, though.

My brother never thought of selling part of the land to finance construction. We think it belongs to our children and should be left to them.

We are buying the materials for the building ourselves. The contractor told us how much we need, and we are getting it from local suppliers, except the brick, which we are getting from a brick factory in Giza. We trust the people here and they trust us and we don't have to worry about transporting the materials.

APPENDIX 4

1981 Housing Law

ARTICLE (1) Except for luxury housing, the yearly rental value of residential units constructed after the effective date of this law should not exceed 7% of the total value of land and building. At least two thirds of the space in any of these buildings should be set aside for rental.

ARTICLE (2) The value of the land referred to in the above article is established on the basis of the price of comparable land at the time the building permit is issued. The value of the building is established on the basis of actual cost of construction. If the owner deliberately delays the completion of the building, the cost is assessed on the basis of prices prevalent at the time the construction should have been finished.

The appropriate minister is to specify the criteria and guidelines to be followed in assessing the value of land and building, in setting the gross rent for the building, and in determining the ways in which such rent is to be distributed among the different units within the building, taking into consideration the location of each unit and its characteristics.

ARTICLE (3) Each governor shall form a committee of specialists to provide him with annual reports based on studies carried out within the governorate and dealing with the following:

(a) tables of land values based on current legal transactions in the city, district or the region.

(b) actual cost of building on various levels, taking into consideration fluctuations in the prices of construction materials & cost of labor. Estimates included in these reports are to be used as guidelines in assessing the rental or sale value of the units. Copies of the reports should be made available for a fee not exceeding five pounds per copy.

ARTICLE (4) Assessment of the rental or sale value of the buildings or of the units within them should follow the guidelines, reports and studies mentioned above. The price or rent should be clearly stated in the sale contract or the lease. The owner should provide the renters/

buyers, within thirty days of the contract, with the documents used in the assessment of the rent or price of the unit(s).

ARTICLE (5) If the renter considers the rent to be in excess of the limits allowed by law he has the right to ask the Assessment Committee to assess his rent. Such requests should be made within 90 days of the signing of the contract or of his occupation of the premises. The Committee's decision may be appealed in court within 60 days of receiving notification of the decision.

ARTICLE (6) Owners of buildings constructed since the effective date of this law may obtain from the renter an advance rent not to exceed two years rent. This however, is conditional on the following:

- (a) the basic construction is completed. Only the finishing remains to be done.
- (b) advance rent and agreement should be put in writing and should specify the amount of advance rent, how it will be deducted from the rent over a period not to exceed double the period over which the advanced rent is collected, and the date the unit would be available for occupancy by the renter.

ARTICLE (7) Effective the day this law is passed, rent for buildings leased prior to September 9, 1977 for other than residential use will be subject to fixed annual increase based on a percentage of the rental value of the property which was used as the basis for tax assessment on the building at the time of its construction.

50% of the increase should be set aside for repair and maintenance. Amounts thus collected are considered trust funds and are to be disbursed in accordance with guidelines established by the appropriate minister.

ARTICLE (8) Increases mentioned in the above article are due the same day the regular rent is due and are subject to the same conditions as regular rent. These increases are in effect for five years.

ARTICLE (9) Responsibility for repair and regular maintenance of a building and its elevators are as follows:

(1) If the revenue generated from half the increases mentioned in article (7) is sufficient, repair and maintenance should be covered by it.

(2) If revenue from the above sources is not sufficient or if the building does not include non-residential units, responsibility for repair and maintenance is distributed as follows:

- (a) buildings constructed before March 23, 1965: one third to the owner and two thirds to occupants.
- (b) buildings constructed between March 23, 1965 and September 9, 1977: cost should be divided equally between owner and tenants.
- (c) buildings constructed after September 9, 1977: two thirds to owner, one third to occupant.

Disputes between owner and occupants or between the occupants to either improve them or to expand their use are not considered repair and maintenance may be taken to court for decision.

Renovations in the communally used parts of the building to either improve them or to expand their use are not considered repair and maintenance and are therefore not subject to the above provisions. Such renovations should be done in consultation and agreement between the parties involved.

ARTICLE (10) The government should provide easy terms, cooperative loans for the purpose of repairing and maintaining buildings. Such loans carry first lien on the borrower's assets and are tax deductible.

ARTICLE (11) Except for luxury housing and effective January 1, 1982, all owners and occupants of residential buildings constructed since September 9, 1977 will be exempted from taxes. Income generated from such buildings will not be considered income for the purpose of income tax. This article does not apply to residential units that are rented furnished or to hotels.

ARTICLE (12) Except for luxury housing, the prior approval of the Committee on Organization and Direction of Construction is no longer required for obtaining building permits.

ARTICLE (13) Individuals and corporations building multi-unit structures after the effective date of this law are not allowed to sell or rent furnished more than one third of the total space in the building. This provision applies even when the building is owned by more than one person. Sale of all or part of the building does not alter the above limitation.

ARTICLE (14) Public sector companies are required to set aside one third of the profits set aside for "services" to build housing for their employees. Surplus funds from this source will be used to finance economy housing in the governorate in which the company is located.

ARTICLE (15) The government shall support cooperative housing by making available the necessary loans and construction materials in accordance with the rules and regulations governing cooperative housing. Individuals desiring to add new stories to their houses, to complete unfinished construction, or to invest in economy housing will have access to low interest loans provided by the government or the banking institutions.

ARTICLE (16) Renters of furnished rooms in schools or hospitals and their annexes have the right to continue their occupancy of the unit even after the rent period has expired, provided that they abide by the contractual arrangement with regards to rent.

ARTICLE (17) Lease contracts for foreigners are legally terminated at the end of their legal residency in the country. In all cases however, the contract will be transferred to the foreigner's Egyptian wife and her children.

ARTICLE (18) Tenants are not subject to eviction even after the expiration of their lease except in the following cases:

(a) full or partial demolition of an unsound structure, and temporary evacuation for carrying out necessary repair and maintenance.

(b) if the tenant fails to pay the overdue rent within fifteen days of his notification.

(c) if it is proven that the tenant has transferred his rent to another or has subleased the premises without a clear and written permission from the owner . . .

(d) if it is legally proven that the tenant is using the premises or has permitted the premises to be used in a way that disturbs the peace and tranquility or endangers the building or public health or violates public decency. Such designation is valid only when it is established by a final court decision.

ARTICLE (19) In all cases where the use of the premises has been changed to non-residential, the rent will increase in the following way:

200% for structures built before 1/1/44.

100% for structures built between 1/1/44 and 11/9/61.

75% for structures built between 11/9/61 and 9/7/77.

50% for structures built after 9/9/77.

In case of partial change in the use of the premises, the owner is entitled to have the above increases.

ARTICLE (20) A tenant and his family are entitled to sublease (furnished) no more than one apartment in the same city without the owner's permission.

ARTICLE (21) In cases where it is legal to sell a store or factory or to transfer the use of a residential or non-residential unit to others, the original owner is entitled to half the amount charged for the sale or the transfer of the tenancy rights . . . The tenant is obliged to notify the owner informing him as to the amount charged. The owner in this case has the right to purchase or regain the use of the premises by paying the amount minus the 50% he is entitled to as owner . . .

ARTICLE (22) Occupants of residential units are not allowed to rent furnished more than one unit in any one town without the permission of the owner. This should not in any way affect the latter's right to obtain the additional rent specified in such cases under Article 45 of Law 49, 1977. This article does not apply to residential units in resort towns.



ARTICLE (23) Priority for renting residential units built by the public sector is given to retired employees of the government or public sector companies.

ARTICLE (24) Owners who accept advanced rent for the same unit from more than one perspective tenant or who rent the unit to someone other than the one who paid the advanced rent, will be subject to the criminal penalties specified for the crime of fraud. Such transaction occurring after the effective date of this law will be null and void, even if registered and notarized.

The same penalty applies to owners who unnecessarily delay possession of the unit by the tenants. In addition, the owner must refund to the tenant twice the amount of the advanced rent he charged. In this case the tenant has the right to complete the needed work on the unit.

ARTICLE (25) Article (9) of the current law does not apply to buildings requiring repair from damage inflicted in the course of war.

ARTICLE (26) Except in the case of illegal key money, the penalties associated with laws organizing and regulating the relationship between the owners and tenants, (except for the penalties listed in Article 24), shall not include imprisonment.

The owner can avoid all penalties specified for the crime of key money by returning all the amount he charged the tenant and by donating twice the amount to the public funds supporting economic housing in the governorate, before a final court decision is achieved in the case.

ARTICLE (27) It is illegal to include in any contract conditions prohibited by this law. Violators will be punished by fines and the conditions will be rendered inapplicable.

All those receiving money in violation of the current law are obliged to return it and to pay twice the amount to support the funds designated for the support of public housing, in the governorate.

ARTICLE (28) For the purpose of this law, all buildings are considered as residential which are not designated as commercial, industrial, or professional. This article applies only to Egyptian ownership.

ARTICLE (29) Private insurance and housing funds are treated the same as cooperative housing associations with regard to their assets invested in luxury housing.

APPENDIX 5

Check List for In-Depth Interviews

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## Semi-Structured Interviews

These questions are meant to be suggestions. Sometimes, you will want to probe more deeply. In other cases, some questions given here will be inappropriate and can be skipped. For sensitive areas, indirect questions may be better than direct ones.

You should take notes during the interviews as best as you can. If possible, the easiest way to do this is to work in pairs, with one asking questions and the other taking notes.

After each interview is completed, you should write it up in the format given in the annex. The same format can be used in writing up interviews with government officials, except that they will be giving their views on suppliers and on how the government should support their activities.

### 1. Decision to Enter the Construction Field:

- When did he start the business?
- How did he start? On what scale (description of how his business evolved)?
- Did he have a partner? Other family members involved?
- Skills needed to enter into the business.
- How did he acquire those skills?
- Occupational history.
- Length of residence in area.
- Registered? By whom? Are most businesses of this type in this area registered? If not, why?
- Members of cooperative societies, or other association of businesses of this type?

### 2. Scope of Operation:

- Geographical scope (in relation to place of residence)
- Types of construction he generally undertakes
- Aspects of the construction process he deals with
- Means of recruiting customers (through relatives, friends, and suppliers, previous customers...)
- General profile of his typical customer
- What are the major problems he faces in his business?
- Is construction his only business? What proportion is informal construction?

- What are his other businesses?
- Percentage of total income each generates?
- Has he thought of ever getting out of the construction business? Why?
- How long does he expect to stay in it?
- Does he know (or guess) the failure rate among contractors?

### 3. Building Design:

- What are the basic design types used in this area?
- Describe design process; identify differences between formal and informal sector.
- Who designs most of the houses in this area?
- What are design problems of owner-designed buildings (e.g., over-designing/underdesigning, with potential safety risk?)
- What are design problems of architect-designed buildings (e.g., too expensive for low income purchasers)?
- What are houses designed in this manner?
- How much do architects charge?

### 4. Construction Process and Land Use:

- How does he estimate cost?
- Average construction costs per sq. meter (does this include finishing, utilities, land)?
- How have these costs changed over last 3 years? Last decade?
- Average cost of a single job? How many square meters?
- How does he decide on building materials? Does he follow the owner-builder choice or does he suggest his choice of material?
- How long do negotiations usually take?
- Description of the initial meeting(s) and subsequent steps?
- Length of time between initial contact and start of construction process?
- Are customers mostly friends and neighbors?
- What proportion of houses in this area are built entirely based on self-help?
- What proportion of housing for lowest income groups?
- What proportion are built partially based on self-help?
- Which parts of homes are usually constructed using self-help?
- How long does it typically take to construct a habitable unit?

- Do people select sites for building primarily because of proximity to their jobs or because of ease of acquiring attractive land?
- In what areas of the city is most informal building going on today?
- Why are many buildings in this area not properly maintained?
- Do you know of buildings in this area which have collapsed? Anyone hurt? Cause? Were they built without permit, or in violation?
- What should government do?
- Differences in quality of construction, degree of maintenance between formal and informal sector?

5. Supply of Building Materials:

- Where does he get building materials?
- Prices of building materials (for each, obtain the different prices of various markets).
- Percentage he gets in each price category (for each type of material).
- Which ones are most profitable for him?
- Does he use the same suppliers or does he shop around for the best bargain?
- Advantages/disadvantages of both methods.
- Are building materials easily available?
- Which are scarce?
- How does he protect himself against price escalation?
- Does he stockpile?
- Where does he store building materials?
- Cost and method of shipping (for each material).
- What should government do?

6. Labor:

- How many employees? Skilled or unskilled? Permanent or temporary?
- Sources of labor (skilled/semi-skilled/unskilled).
- Daily rate for each category.
- Does he keep a permanent labor force? How many in each category and how much he pays them.
- Where does he get additional labor?
- Types of contracts with workers.
- Where do most of the workers come from? Are they local?
- What happens in cases of conflict with his workers?

- Methods of workers' supervision.
- Are there shortages of certain types of workmen? Why?
- What should government do?

7. Infrastructure (physical and social)

- What proportion of informal houses that you build have electricity, water, sewerage hook up? Who does hook up? How? (i.e., if illegal) When? (i.e., how many years after house built?)
- How is infrastructure provided to new communities--first standpipes by government? Community self-help? (e.g., hook into water already provided because of existing agricultural use for land)
- How are community facilities and support services provided to new community? Self-help? If so, what types of organizations? Cooperatives? Government? Religious? Private sector?
- What should government do?

8. Finance and Investment:

- Does he buy supplies on credit?
- What are the terms of credit in these cases?
- How do the suppliers guarantee payment?
- How does he finance bigger jobs?
- If he needs additional capital, how does he obtain it?
- Does he deal with banks or other formal lending institutions including cooperatives?
- Why/why not?
- Would he like to deal (deal more) with formal lending institutions?
- What does he consider as the main obstacle for him (or people like him) in deal with formal lending institutions?
- Is he aware of what is available for and the conditions of borrowing from these institutions?
- Does he advise his customers regarding where to obtain building loans?
- What does he think is the best way for someone to obtain a loan?
- Does he think there is shortage of money for the kind of construction he undertakes?
- Has he noticed any changes in the way owners and contractors finance their building operations in the last ten years?
- Is all his money tied up in his construction business?
- Does he own buildings? What kind? Did he build them?
- Does (has) he own(ed) land purchased for subdivision and housing development?

- His plans for future investment (or what he advises people to invest in and why).
- Is he planning to expand his operation? In what way?
- Does he participate in Gamiya? Do other suppliers he knows?
- Does he extend credit to his customers? Friends and neighbors only?
- How much down payment does he require?
- Terms of credit (mark-up, length of time, periodic or lump sum payments).
- How much of this business involves credit to his customers?
- How does he guarantee payments?
- Has he had bad experiences with customers not paying?
- Types of customers considered good/bad risk.
- What is minimum seed capital needed to enter the informal housing market? Relationships to typical annual income in area?
- In this area, what is average key money for rental housing? What is monthly rent for such a housing unit?
- Does the gradual accumulation of materials (through scavenging, purchase, etc.) play an important role in financing informal housing?
- In this area, how have land and housing values and rents changed over the past 3 and 10 years?
- Do most informal owners rent rooms to supplement incomes?
- What should government do?

9. Legal Issues:

- Does he think his average customer is aware of most of building regulations?
- Does he think the majority of the people he deals with (owners and suppliers) comply with these regulations?
- Which regulations are most commonly violated and why?
- What proportion of his customers build without a permit?
- Does that involve any risk for the contractor?
- What are the contractor's liabilities if the building collapses?
- What does he think of the rules and regulations governing construction?
- Which ones are most bothersome for someone like himself?
- What does he think of the allocation system as it applies to building materials?
- Has he ever been harassed by any authorities during (or after) construction?
- Do most informal builders build on agricultural land? Do they have title usually?



- How are land and building regulations enforced? How are disputes resolved?
- What does he think the government can do to remedy the housing situation especially for the poor?
- Have any informal houses been demolished by the government in this area?

10. Other Supply Participants? (referral questions)

FOR EACH REGULAR SUPPLIER

- Where is he located (get exact address).
- How he got to know him.
- Does he know him socially?
- Is he a relative?
- What benefits does he get in dealing with him on a regular basis?
- How frequently does he deal with him and on what basis?

SUPPLY PARTICIPANT

I

(Initial Contact)

11. Contractor/Supplier Characteristics: (Some of these questions may be more sensitive than the previous ones).

- Age.
- Marital status.
- Number and age of children, their occupations.
- Place of birth.
- How much initial capital did his business require?
- How did he obtain it?
- Annual turnover for last year? For 1979? Expected this year?
- What is his margin of profit?
- Does it vary from job to job? On what basis?

INFORMAL URBAN HOUSING SECTOR STUDY

SUPPLY INTERVIEWS

\_\_\_\_\_  
Interviewer

\_\_\_\_\_  
Date of Interview

\_\_\_\_\_  
Type of Respondent

\_\_\_\_\_  
Location of Interview

\_\_\_\_\_  
Name of Respondent

SUMMARIZE MAIN POINTS OF INTERVIEW UNDER FOLLOWING HEADINGS: (Skip if not covered in interview)

1. Decision to enter the construction field (write up answers to questions in this area).
2. Scope of operation.
3. Building design.
4. Construction process and land use.
5. Supply of building materials.
6. Labor.
7. Infrastructure.
8. Finance and Investment.
9. Legal issues.
10. Other supply participants.
11. Contractor/supplier characteristics.

**APPENDIX 6**

**Occupant Survey Questionnaire**

**Housing Sector Study**

**Abt Associates**

**Dames & Moore**

**GOHBPR**

**(April - May 1981)**

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Questionnaire Code

Owner 1

Questionnaire to be filled out by:

Renter 2

Address of the surveyed place:

Governorate: .....

City: .....

Qism/center: .....

Shiakha/village: .....

# of the enumeration district: .....

Type of place: ..... Urban  1  
Rural  2

Name of the street: .....

Interviewer Code No. ....

Household Code No. ....

Date of Meeting / /1981 Time: From To

Interviewer Name: ..... Signature: .....

Team Leader Name: ..... Signature: .....

PART I

Basic Data

Family Data

This part to be filled  
out for all respondents

The following table is to be filled out for all members of the family who are permanent residents of the household.

Name	Relationship to Head of Household	Age in Complete Years	Do they share expenses?		Do they intend to leave the family within a year?	
			Yes	No	Yes	No
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Put a check next to the name of person giving the information.

Note the type of relationship to head of household, such as wife, son, daughter, father, mother, uncle, cousin, etc.

DATA ON THE RESPONDENT

1. Name:
2. Sex:
 

Male	1
Female	2
3. Age in complete years:
4. Place of birth:
 

Governorate:

City:

Village:

Abroad (name of country):

Type of Place (urban/rural)	Urban	1
	Rural	2
5. Where did you spend most of your life -- or where have you been since you were 15 ? (Was this in a city or village ?)
 

Governorate:

City:

Village:

Urban:	1
Rural:	2
Abroad:	3

6.	What is your educational status ?	
	Illiterate:	1
	Read and write:	2
	Finished Primary:	3
	Finished Preparatory:	4
	Finished General Secondary:	5
	Finished Secondary - Arts:	6
	Finished a degree higher than Secondary but less than University	7
	University Degree (includes post graduate degrees)	8
	Other (specify)	9

7.	What is your occupational status ?	
	I work for myself and don't employ anyone	1
	I work for myself and I employ others	2
	Employee	3
	I work in the family without payment	4
	Unemployed, worked before	5
	Newly unemployed	6
	Student	7
	Housewife	8
	Don't want to work	9
	Retired	10
	Elderly - not able to work	11
	Handicapped - not able to work	12

If respondent answered from 1 to 5:

8. What is the type of work which you do (or did), or what is your main profession?

9. How do you usually get to work? (means of transportation for those who answered 1-4 in question 7.)

Put only one check in the "primary mode" column and one check in the "secondary mode" column (if there is a secondary mode of transport).

Means of Transport	Primary Mode	Secondary Mode
Public bus	1	1
Metro or tram	2	2
Taxi	3	3
Train	4	4
Bus or car from place of work	5	5
Private car	6	6
Motorcycle	7	7
Bicycle	8	8
By foot	9	9
Other ( animal/boat/carriage )	10	10

10. How long does it take to get to work ( for those who work)?

Time: Hours ..... Minutes ....



PART II

Residential Conditions

Fill out this section for all respondents

Type of residence:

11. What type of residence do you live in ?

House	0
Villa	1
A floor in a building	2
An apartment or more in an apartment building	2
Part of an apartment	4
Separate room or more	5
Furnished apartment	6
Rural house	7
Grave	8
Temporary unit ( palm reeds / tin shack tent / kiosk )	9
Other	10

Condition of Residence:

12. Is your residence used for:

Residence only	1
Residence and professional work	2
Residence and commercial work	3
Residence and industrial work	4
Residence and agricultural work (storage of agricultural materials, etc.)	5

Rooms of a house:

- 13. How many (total) rooms are there in this residence?
- 14. How many of these rooms are used for sleeping ?

Rooms specifically used by the household:

- 15. How many rooms are for your family's use only ?
- 16. How many of these are used for sleeping ?
- 17. How many complete baths (or toilets and baths in one room) are in your house?
- 18. How many are for your family's use only ?
- 19. How many toilets are there in your house (aside from complete bathrooms)?

- 20. Are these toilets:

- For private use 1
- For shared use 2
- There are none 3

- 21. Is the kitchen used:

- Privately 1
- Cooperatively 2
- There is none 3

- 22. What is the source of pure water ?

- Private connections 1
- Public faucet for (in) the building 2
- Public faucet outside the building 3
- There is no pure water 4

In cases of no pure water:

23. Do you get water from:

- Private pumps in the building 1
- Public pumps outside the building 2
- Private pumps for the dwelling 3
- Wells and springs 4
- Other (specify) 5

24. How much do you pay per month for water ?            LE            Piastres

.....            .....

25. What type of sewer is there ?

- Public sewer 1
- Cesspool 2
- Pit latrine 3
- None 4
- Other (specify) 5

26. Do you pay anything for sewage disposal ?

(Connection charges, maintenance charges, or pumping out tanks)

Yes 1

No 2

If yes,

27. How much do you pay per month/year ?

Note: If an advance payment and periodic payment are made, note both.

	LE	Piastres		LE	Piastres
Per year	.....	.....	Per month	.....	.....

28. Does the dwelling have electricity ?

Yes 1

No 2

If yes,

29. How much do you pay each month for electricity ? .....LE..... Piastres .....

30. How do you dispose of garbage ?

Carried away by garbage collectors 1

Take it to the garbage dump 2

Throw it in the street 3

Other (specify) 4

If collected by garbage collectors,

31. How much do you pay the garbage collector monthly ?

32. How far from your home is the closest public transportation stop ?

Distance: km ..... meter ..... Time: hours .....minutes ....

33. How much time does it take to get from your dwelling to the following places:

(Places which you or your family use)

Hours      Minutes

Bakery or breadseller

Vegetable grocer or stand

Butcher

Grocery

Closest hospital

Hours      Minutes

Closest clinic or health unit

Primary school

Preparatory School

Secondary school

Police Station

Garden or public park

Mosque/church

Nearest telephone

(in case there is no telephone in the dwelling)

Previous dwelling

34. Did you live in another dwelling before you lived here ?

Yes 1

No 2

If yes,

35. With regard to the dwelling which you lived in right before you moved here, were you:

A renter 1

An owner of the dwelling and the land 2

An owner of the dwelling only 3

Living with your family or relatives 4

Living with friends 5

Other (specify) 6

Change of residence:

36. How long have you lived in this dwelling (in complete years) ?

If it was 10 years or less,

37. Where did you live right before coming there ?

Governorate:

City:

Village:

Abroad (name of country)

38.	Was it urban or rural ?	Urban	1
		Rural	2

39. What were your reasons for moving here ?

	Looking for a job	1
	Starting work for the first time	2
	Job transfer	3
	Changing type of job	4
	Education (for respondent - head of household)	5
	Education (for children)	6
	Education (for other family members)	7
	Marriage	8
	Divorce	9
	Widowhood	10
	To live with or near family	11
	Displacement	12
	Health reasons	13
	Improved living conditions	14
	Eviction	15
	Return from abroad	16
	Retirement	17
	Other (specify)	18

In case of more than one answer in 39,

40. What is the most important reason of all those you mentioned?

PART III

Housing Satisfaction

This part to be filled  
out for all Respondents

Regarding the dwelling:

41. How satisfied are you with your dwelling ?

Very satisfied	1
Somewhat satisfied	2
Not satisfied	3

In cases of satisfaction,

42. What do you like about your dwelling and in what order of importance ?

(Place a check for one reason; if there is more than one reason, use additional columns)

	<u>First in Importance</u>	<u>Second in Importance</u>	<u>Third in Importance</u>
Sufficient number of rooms	0	0	0
Healthy dwelling	1	1	1
Social environment of the neighborhood	2	2	2
The neighborhood is quiet and clean	3	3	3
Rent is cheap	4	4	4
Close to transportation	5	5	5
Close to schools	6	6	6
Close to workplace	7	7	7
Close to family friends	8	8	8
Owner	9	9	9
Other (specify)	10	10	10



In cases of non-satisfaction,

43. What don't you like about your dwelling ?

	First in Importance	Second in Importance	Third in Importance
Number of rooms is not sufficient	1	1	1
Dwelling not healthy	2	2	2
The social environment is not appropriate	3	3	3
The neighborhood is noisy and not clean	4	4	4
Rent is expensive	5	5	5
Far from transport	6	6	6
Far from schools	7	7	7
Far from workplace	8	8	8
Far from family and friends	9	9	9
Other (specify)	10	10	10

44. How does this dwelling compare to your previous one ?

(For those who had a previous dwelling and answered yes to 34)

Same quality	1
Current dwelling better	2
Previous dwelling better	3

45. Do you think your dwelling needs modifications, changes, improvements or additions ?

Yes	1
No	2 (skip to 48)

In case of yes,

46. What are these ?

47. Do you currently have plans to make these changes or improvements ?

Yes	1
No	2

48. Would it be better for you to own or to rent ?

Own	1
Rent	2

49. Why is that ?

Regarding the area in which you live,

50. How satisfied are you with this area ?

Very satisfied	1
Somewhat satisfied	2
Not satisfied	3

51. What do you like about this area ?

	First in Importance	Second in Importance	Third in Importance
The area is healthy	1	1	1
The social environment is appropriate	2	2	2
Quiet and clean	3	3	3
Means of transport are sufficient	4	4	4
Schools	5	5	5
Stores and shops close by	6	6	6
Health services close by	7	7	7
Other (specify)	8	8	8

52. What don't you like about your area ?

	First in Importance	Second in Importance	Third in Importance
<b>Health Reasons:</b>			
Garbage in the streets	1	1	1
Garbage in the canals and ditches	2	2	2
Rats	3	3	3
Flies and insects	4	4	4
Overflowing sewers	5	5	5
Air pollution	6	6	6
Lack of pure water	7	7	7
Lack of sewers	8	8	8
Lack of adequate health facilities	9	9	9
<b>General Reasons:</b>			
Lack of electricity	10	10	10
Lack of sufficient transport	11	11	11
Lack of schools	12	12	12
A lot of power outages	13	13	13
A lot of water outages and the water doesn't get to the higher floors	14	14	14
Lots of workshops and noise	15	15	15
The social environment is not appropriate	16	16	16
Other	17	17	17

53. How would you compare this area with your previous one ?

Same quality	1
This area is better	2
Previous area was better	3

54. In your opinion, what change has taken place in the area in recent years ?

No change	1
Gotten better	2
Gotten worse	3
Don't know	4

55. What changes have occurred in order of importance ?

	First in Importance	Second in Importance	Third in Importance
Streets paved	1	1	1
Electricity connected	2	2	2
Pure water connected	3	3	3
Sewers connected	4	4	4
Schools put in	5	5	5
Health facilities put in	6	6	6
Transport improved	7	7	7
Shops moved in	8	8	8
Control of flies and insects	9	9	9
Streets cleaned and garbage collected	10	10	10
The Government prevents overflowing sewers	11	11	11
Rising social class	12	12	12
Other (explain)	13	13	13

56. In your opinion, what changes have occurred in order of importance ?

	First in Importance	Second in Importance	Third in Importance
A lot of garbage and dirty streets	1	1	1
Overflowing sewers	2	2	2
A lot of flies and insects	3	3	3
A lot of mud in the streets	4	4	4
A lot of water outages and no water pressure	5	5	5
A lot of power outages	6	6	6
A lot of workshops and noise	7	7	7
Air pollution	8	8	8
Drop in social class	9	9	9
Other (specify)	10	10	10

57. If you had a complaint or suggestion regarding the area, where would you direct it to? (Place a check in the first column in front of their name).

58. Have you ever presented a complaint or suggestion about this area to anyone ?

Yes	1	(Place a check in column two in front of person contacted and actions which resulted from it.)
No	2	

Name of person or authority	Who would you complain to?	Who did you complain to ?		
		Causes of complaint removed	No Action Taken	It was studied
Local Council	1	1	1	1
City Council	2	2	2	2
Village Council	3	3	3	3
Governorate	4	4	4	4
Water Company	5	5	5	5
Electric Company	6	6	6	6
Organization of Transport	7	7	7	7
Education Administration	8	8	8	8
Health Administration	9	9	9	9
Social Affairs Administration	10	10	10	10
National Party	11	11	11	11
Other (specify)	12	12	12	12

59. What improvements in the area should be done ?

And would you be prepared to participate in paying for them ?

	First in Importance		Second in Importance		Third in Importance	
	Willing to Pay	Not Willing to Pay	Willing to Pay	Not Willing to Pay	Willing to Pay	Not Willing to Pay
Nothing needs to be done						
Water connections to the area						
Electricity connections to the area						
Sewer connections to the area						
Paved streets						
Street repairs						
Regular street cleaning						
Regular garbage collection						
Health care center						
Day care center						
Public schools						
Sufficient transport						
Sufficient shopping						
Church/mosque						
Eradicate rats						
Eradicate flies and insects						
Other (specify)						

60. Aside from the Government, do you know of any organizations that are working to improve this neighborhood ?

Yes 1

No 2

If yes,

61. What are these organizations ?

Regarding changing the dwelling,

62. Are you considering moving to another place ?

Yes 1

No 2

If yes,

63. What are your main reasons for considering a move ?

Moving to a place I own 1

Moving to a safer place 2

Moving to a cheaper place 3

Moving to a larger place 4

Moving to a healthy place 5

Moving to a better social environment 6

Getting closer to schools 7

Getting closer to workplace 8

Administrative eviction 9

Official ruling to vacate dwelling 10

Other (specify) 11

64. If there was more than one answer to 63, what was the main reason ?



65. Do you have definite plans or are you just thinking of moving?

Definite plans 1

Just thinking 2

66. Have you found another place which is suitable ?

Yes 1

No 2

If yes,

67. Is it in the same city or village?

Yes 1

No 2 (skip to 69)

If yes,

68. How far away from here is that place ? km ..... meters .....

69. Where is the new dwelling ?

Governorate:

City:

Village:

70. Who owns the place you intend to move into ?

Private 1

Public 2

If no to 62,

71. Of the following reasons, which would cause you to think of moving?

Change place of work	1
Lower family income	2
Higher family income	3
Change in family size and housing needs	4
Chance to move into government housing	5
Forced to evacuate dwelling	6
Housing cost rises	7
Other (specify)	8

72. What is the primary cause if more than one was mentioned ?

73. Would you prefer private or public housing and why ?

Private ownership is better	1
Public ownership is better	2
Don't know	3

PART IV

Data on Renters

Questions 74 - 100 to be filled out by renters only.

General Data:

74. Do you have a contract with the owner ?

Yes 1

No 2

75. Who owns your dwelling ?

Central government 1

Local government 2

Public sector 3

Awqaf 4

Real estate company 5

Cooperative 6

Relative 7

Friend 8

Private owner 9

Other 10

76. What is your rent now ? LE ..... Piastres

77. What was your rent when you moved in ? LE ..... Piastres

78. Is this apartment furnished or unfurnished ?

Furnished 1

Unfurnished 2

79. Does a renter live in one or more rooms in your dwelling?

Yes 1

If yes,

80. How much do they pay per month ? LE ..... Piastres

81. Does the owner live in the building ?

Yes 1

No 2

82. Did you pay anything as an advance before you moved in ?

Yes 1

No 2

If yes,

83. How much did you pay to: (Amount in LE)

Previous tenant 1

Owner 2

Broker 3

Other (specify) 4

84. What are the sources of money which you used for pay for your dwelling ?

Savings from gamiya 1

Savings from bank account 2

Other savings 3

Payment from incoming tenant 4

Sale of land 5

Sale of jewelry 6

Gift from family or friends 7

Loan from bank or savings organization 8

Loan from family or friends 9

Other (specify) 10

85. If you wanted to buy this place or a similar place around here, about how much do you think it would cost ?

LE .....

Don't know

Specific Data on the Building:

86. Has the number of units increased or decreased in this building ?

No change	1
Increased	2
Decreased	3

If a change (increase or decrease) has occurred in the number of units,

87. What changes were they ?

Building one or more apartments	1
Building one or more rooms	2
Dividing some apartments into smaller ones	3
Dividing some apartments into separate rooms	4
Combining some apartments	5
Combining some rooms into apartments	6
Converting shops into apartments or rooms	7
Converting some apartments or rooms into shops or garages	8
Other (specify)	9

88. Has the building condition improved or declined since you have been here ?

No change	1
Improved	2
Declined	3

If there has been improvement,

89. What have been the most important improvements ?

If there has been decline,

90. What have been the most important declines ?

Modifications and additions to the dwelling:

91. Have there been any modifications or additions to the dwelling since you have lived here ?

Yes 1

No 2

If yes,

92. What have been the most important changes or modifications ?

93. What did they cost ? LE .....

94. Does the owner know about them ?

Yes 1

No 2

95. Did the owner agree to them ?

Yes 1

No 2

Repairs and renovations of the dwelling:

96. Who does the required repairs and maintenance in your dwelling ?

At my expense	}	myself	1
At the owner's expense			2
At my expense	}	owner himself	1
At the owner's expense			2
At my expense	}	Friend or relative	1
At the owner's expense			2
At my expense	}	Specialized workers	1
At the owner's expense			2
At my expense	}	Contractor	1
At the owner's expense			2
At my expense	}	Other (specify)	1
At the owner's expense			2

97. Did you spend anything on repairs or renovations for your dwelling during the past year ?

Yes 1

No 2

If yes,

98. How much did you spend ? LE .....

99. Is this building properly maintained ?

Yes 1

No 2

If no,

100. In your opinion, why is that ?

PART V

—  
Data on Owners  
—

A. General data on all owners:

101. Do you own all or only part of the building ?

- Only the dwelling unit 1
- The dwelling unit and part of the building 2
- The dwelling unit and all of the building 3

102. Do you own all or part of the land on which the building is situated ?

- Yes 1
- No 2

103. About how much land is this building situated on ?

Area in square meters: .....

104. Supposing your dwelling was furnished, how much monthly rent could you get for it ?

LE .....

105. What is the monthly rental value of your dwelling ? LE .....

106. Suppose you wanted to sell your dwelling, how much could you get for it ?

LE .....

107. What was the purchase price of the land and the property, or the purchase price of the property ?

LE .....

108. What sources of money did you use to buy this ?

- Didn't pay anything 1
- Savings in gamiya 2
- Savings in bank/credit union 3
- Other savings 4
- Key money from former dwelling 5



Sale of property	6
Sale of jewelry	7
Gifts from friends/relatives	8
Inheritance	9
Loan from bank/credit union	10
Loan from family/friends	11
Other ( specify)	12

Three sources according to importance:

	Less than 1/4	1/4 of the value	1/2 of the value	Most of the value	Entire Value
1st source	5	4	3	2	1
2nd source	5	4	3	2	1
3rd source	5	4	3	2	1

109. What was the condition of the dwelling or building when you took possession ?

Built on vacant land	1	Skip to	111
Acquired the dwelling or building but made major additions or changes	2	Skip to	138
Acquired the building or dwelling in its current condition	3	Ask 110, then skip to	138

In case of no major additions or changes,

110. Why haven't you made additions or changes ?

What is the most important reason?

Like it the way it is	1
Not enough money	2
Can't get building materials	3
Can't get technical help/labor	4
Can't get government approval	5
Afraid the government might make me move	6
Building not worth it	7
Other (specify)	8

B. Data for builders on vacant land only:

111. How did you acquire the land ?

- |   |   |
|---|---|
| Bought from previous owner              | 1 |
| Rented from previous owner, then bought | 2 |
| Hekr                                    | 3 |
| Inherited                               | 4 |
| Other (specify)                         | 5 |

112. What year did you acquire it ? .....

113. What was the most important reason for choosing this piece of land ?

114. How did you find the lot ?

- |                      |   |
|----------------------|---|
| Friends or relatives | 1 |
| Broker               | 2 |
| Advertisement        | 3 |
| Looked for it myself | 4 |
| Other (specify)      | 5 |

115. When you got the land, was it specified as a building lot?

Yes 1

No 2

Don't know 3

If no,

116. If no, what was it specified as ?

- |                   |   |
|-------------------|---|
| Agricultural land | 1 |
| Desert            | 2 |
| Other (specify)   | 3 |

117. Who was the previous owner ?
- |                                |   |
|--------------------------------|---|
| Government                     | 1 |
| Private individual             | 2 |
| Waqf                           | 3 |
| Union/Organization/Cooperative | 4 |
| Don't know                     | 5 |
| Other (specify)                | 6 |

118. Have you registered the land ?
- |     |   |                     |
|-----|---|---------------------|
| Yes | 1 | If yes, skip to 122 |
| No  | 2 |                     |
- If no,

119. Why haven't you done so ?

120. If no, has it caused you any worry or anxiety ?
- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |

121. If yes, what is the cause of your concern ?

If 118 was "yes",

122. Did you have trouble registering the land ?
- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |

If yes,

123. What were the most important difficulties ?

124. In your opinion, how much does the average person know about the rules and regulations of building on vacant land ?

Knows all or most of them	1
Knows some of them	2
Knows a few of them	3
Doesn't know anything at all	4

125. Do you think that most people who build are ignorant about these laws?

Yes	1
No	2
Don't know	3

126. When you got the lot, was it either connected to or within 100 meters of:

	Connected	Within 100 meters	Not Connected	Don't Know
Electrical lines				
Running water lines				
Public sewage lines				

If 126 was "not connected" or "within 100 meters"

127. Did you have difficulties having them extended ?

Electricity		Running Water		Public Sewer	
Yes	1	Yes	1	Yes	1
No	2	No	2	No	2

If yes,

128. Most important difficulties:

Electricity                      Running Water                      Public Sewer

129. How long did you have the land before you started building on it ?

Years                      Months

.....                      .....

130. How much did you pay for the land ?                      LE .....

131. What were the most important sources for purchasing the lot ?

Didn't pay anything	1
Savings from gamiya	2
Savings from bank/credit union	3
Other savings	4
Key money from former dwelling	5
Sale of property	6
Sale of jewelry	7
Gift from friends/relatives	8
Inheritance	9
Loan from bank/credit union	10
Loan from family/friends	11
Other (specify)	12

132. What were the three most important sources of money for purchasing the lot ?

	The whole amount	Most of the amount	Half the amount	Quarter the amount	Less than Quarter
First source	1	2	3	4	5
Second source	1	2	3	4	5
Third source	1	2	3	4	5

133. What is the original land area of the lot ? Area in m<sup>2</sup> .....

134. Have you sold any of the land which you initially got ?

Yes 1

No 2

If yes,

135. What is the land area of the land which you sold ?

Area in m<sup>2</sup> .....

136. Of the land you now own, about how much would you say a similar piece would sell for today ?

Price of m<sup>2</sup> in LE

137. Did any of the money used to purchase the lost come from earnings of someone in your family who was working abroad ?

Yes 1

No 2

(Skip to 160, Construction Process)

C. Data on owners that bought or acquired the building and either did or did not make major changes:

138. How did you acquire this property ?

Bought from previous owner	1
Rented from previous owner, then bought	2
Inheritance	3
Other (specify)	4

139. When did you acquire it ?

Year .....

140. What was your most important reason for choosing this property ?

141. How did you find the property ?

Through friends and relatives	1
Broker	2
Advertisement	3
Looked for it myself	4
Other (specify)	5

142. To the best of your knowledge, was this property in a residential subdivision ?

Yes 1

No 2

143. Who was the previous owner of the property ?

Government	1
Private individuals	2
Waqf	3
Union/Organization/Cooperative	4
Other (specify)	5

144. Have you registered the property ?

Yes                    1            Skip to 148

No                     2

If no,

145. Why haven't you registered it yet ?

146. Does your not having registered the property cause you any anxiety ?

Yes                    1

No                     2

If yes,

147. What causes you anxiety ?

If 144 was "yes"

148. Did you find any difficulties in registering the property ?

Yes                    1

No                     2

If yes,

149. What were they ?

150. What procedures did you follow to purchase and register the property ?



151. Do you believe that many people are ignorant of these rules and regulations ?

Yes 1  
 No 2  
 Don't know 3

152. When you acquired the property was it either connected to or within 100 meters of:

	Connected	Within 100 meters	Not Connected	Don't Know
Electrical lines	1	2	3	4
Running water lines	1	2	3	4
Public sewer lines	1	2	3	4

If it was "not connected" or "within 100 meters" of the utilities in 152,

153. Did you have difficulties having these utilities extended ?

Electricity	Running Water	Public Sewer
Yes 1	Yes 1	Yes 1
No 2	No 2	No 2

If yes,

154. What were the most important difficulties ?

Electricity	Running Water	Public Sewer
-------------	---------------	--------------

155. Did you make any major additions or modifications to the building or dwelling ?

Yes 1  
 No 2 (Skip to 133)



E. The Construction Process:

(To be filled out by owners who built or who made major modifications).

160. Where did you live while you were building or modifying your house ?

- |   |   |
|---|---|
| On a temporary site near the building       | 1 |
| With friends or relatives in their dwelling | 2 |
| In a rented roca                            | 3 |
| In a rented apartment                       | 4 |
| In another place which I own                | 5 |
| In the same dwelling                        | 6 |
| Other (specify)                             | 7 |

161. Did you get a building permit from the appropriate authorities to build or make additions to the dwelling ?

Yes 1

No 2

If no,

162. Why didn't you get one ?

If yes,

163. Was the permit for building or for making additions ?

Building the property or rebuilding 1

For additions 2

164. How long did it take from requesting to receiving the permit ?

Period: Year ..... Month .....

165. What building materials were allocated to you with the permit ?

166. Did you use all of the materials which were allocated to you or was anything left over ?

Used all of them 1

Some left 2

If some material left,

167. How much of it was left ?

Most of it 1

Some of it 2

168. What did you do with the material you didn't use ?

169. Were the allocated building materials good ?

Yes 1

No 2

If no,

170. What was the reason for your dissatisfaction ?

Building Material

Cause of dissatisfaction

171. How long from the time you received your building permit did it take you to actually receive the materials ?  
 (Mention the most important materials only)

Building Material	Period
	Year    Month
First	
Second	
Third	

172. Do you think the building material allocation system is necessary ?

Yes	1
No	2
Don't know	3

173. Who designed your dwelling or building ?

Myself	1
Friend/relative	2
Building contractor	3
Architect/Engineer	4
Government	5
Other (specify)	6

174. Who actually carried out the construction or renovations ?

Contractor (responsible for building and supervision)	1
Relatives (in their spare time)	2
Head of household	3
Gang of workmen (various construction teams supervised by the owner)	4
Other (specify)	5

175. What problems did you encounter during the construction or renovation ?

Shortage of skilled labor	1
Shortage of building materials	2
Transporting materials	3
Getting water to the construction site	4
Transporting workers to the construction site	5
Shortage of money	6
Obtaining permit	7
Hassled by authorities	8
Other (specify)	9

176. Did the authorities inspect the building during or after construction ?

Yes 1

No 2

If yes,

177. Did you have problems with inspection ?

Yes 1

No 2

If yes,

178. What were the most important problems ?

179. Do you think that many owners deviate from the specifications on building permits ?

Yes 1

No 2

Don't know 3

180. In your opinion, which specifications are most frequently violated ?

Height violations	1
Electrical specifications	2
Overhanging right of way	3
Building into right of way	4
Other (specify)	5

181. Do you think that many owners in the area have built without permits ?

Yes	1
No	2
Don't know	3

If yes to 179 and 181,

182. What happens if they get caught ?

Don't know	1
Pay fine	2
Building or part of building is torn down	3
Other (specify)	4

PART VI

—  
Economic and Social Conditions

(Fill in for all respondents)  
—

A. Expenditure:

183. About how much does the household spend monthly for the following:

Food

Transportation

Recreation

Cigarettes/tobacco

Gamiya

Loan repayments

Monthly rent (from 76)

Monthly payments for housing

Insurance payments

Water (from 24)

Electricity (from 29)

Clothing

Medical and health services

Education

Gift

Other installments (other than gamiya and other loans)

Butagaz and kerosene

Other (specify)

TOTAL MONTHLY EXPENDITURE



189. Have you ever borrowed or gotten money from the following sources ?

	Yes	No
Gamiya	1	2
Bank/Credit Union	1	2
Sale of jewelry or gold	1	2
Sale of land or property	1	2
Other (specify)	1	2

190. Do you expect to buy land for a building or a dwelling in the next five years ?

	Yes	No
Land for building	1	2
Dwelling	1	2

191. What sources of money would you use for the purchase ?

	First in Importance	Second in Importance	Third in Importance
Savings in gamiya	1	1	1
Savings in bank	2	2	2
Other savings	3	3	3
Sale of land or property	4	4	4
Sale of jewelry	5	5	5
Gift from friends/relatives	6	6	6
Inheritance	7	7	7
Loan from bank	8	8	8
Loan from friends/relatives	9	9	9
Other (specify)	10	10	10

184. What are your approximate savings (in cash, investments, jewelry, etc.) ?

- |                            |   |
|----------------------------|---|
| None                       | 1 |
| Less than a month's income | 2 |
| 1 - 3 month's income       | 3 |
| 3 - 6 months' income       | 4 |
| More than 6 months' income | 5 |

185. Are you now saving so you can buy or rent another place ?

- |     |   |                  |
|-----|---|------------------|
| Yes | 1 | } saving to rent |
| No  | 2 |                  |
| Yes | 1 | } saving to buy  |
| No  | 2 |                  |

If "no" to both cases in 185, skip to 189.

186. What is the approximate amount you will need to get another place ?

LE

187. Is that for:

- |                   |   |
|-------------------|---|
| Downpayment       | 1 |
| Outright purchase | 2 |
| Other (specify)   | 3 |

188. How long do you expect it to take before you have that amount ?

Years:

B. Income

192. Considering your income and expenditures, do you consider your family:

- |  |   |
|--|---|
| Unable to get by (make ends meet) most of the time | 1 |
| Just barely able to get by                         | 2 |
| Able to get by most of the time                    | 3 |
| Reasonably comfortable                             | 4 |
| Wealthy  | 5 |

193. What is your average monthly income and the sources of that income ?

- |                                      |           |
|--------------------------------------|-----------|
| Earnings of main job (for employees) | <u>LE</u> |
| Earnings from other jobs             |           |
| Incentives                           |           |
| Own business/trade                   |           |
| Agriculture                          |           |
| Rent                                 |           |
| Interest                             |           |
| Investment                           |           |
| Pension                              |           |
| Other (specify)                      |           |

194. In addition to your income, how much do you get from your wife's, children's, and other individuals' income ?

- |          |    |
|----------|----|
| Wife     | LE |
| Children | LE |
| Others   | LE |

195. Do you receive payments from relatives working abroad?

- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |

If yes,

196. How much do you receive ?

Amount ..... Time/period .....

197. Which of the following appliances do you have ?

	Yes	No
Butagaz stove	1	2
Electric stove	1	2
Butagaz or electric water heater	1	2
Electric washer	1	2
Electric (or Butagaz) refrigerator	1	2
Television	1	2
Air conditioner	1	2
Private telephone	1	2
Party line telephone	1	2

PART VII

Observations of the Building and Neighborhood

---

198. Building Area (m<sup>2</sup>):
199. Type of Building:
- |                            |   |
|----------------------------|---|
| Old, customary building    | 1 |
| Legal (Licensed) building  | 2 |
| Under (early) construction | 3 |
| Under (final) construction | 4 |
| About to collapse          | 5 |
| Grave/tomb                 | 6 |
200. Condition of the Building:
- |                   |   |
|-------------------|---|
| Good              | 1 |
| Average           | 2 |
| Bad               | 3 |
| About to collapse | 4 |
201. Building Characteristics:
- |   |   |
|---|---|
| Number of floors  | 1 |
| Number of apartments                                      | 2 |
| Number of shops   | 3 |
| Number of separate rooms                                  | 4 |
| Number of furnished apartments<br>(from total apartments) | 5 |
| Number of temporary apartments<br>(from total apartments) | 6 |

202. Use of the Building:	
Residential	1
Work	2
Residential and work	3
Vacant	4
203. Age of the Building:	
Before 1960	1
1960 - 1970	2
1971 - 1976	3
After 1976	4
204. Age of Additional Units:	
Before 1960	1
1960 - 1970	2
1971 - 1976	3
After 1976	4
205. External walls:	
Brick	1
Stone	2
Mud brick	3
Wood	4
Clay	5
Tin Plates	6
Other (specify)	7

206. Green Areas:

Garden around the building	1
Flower boxes around the building	2
Flower boxes in balconies	3
Trees around the building	4
None	5

207. Elevators:

One	1
More than one	2
None	3

208. Stairway:

One	1
More than one	2
None	3

209. Are all or some windows screened ?

Yes	1
No	2

210. Is there exposed electrical wiring in any of the units ?

Yes	1
No	2

211. Is there garbage within 20 meters of the dwelling ?

A lot	1
Average amount	2
Little or none	3

212. Are there street lights within 20 meters of the dwelling ?

Yes 1

No 2

213. What type of road leads to the house ?

There is none 1

Ungraded road 2

Graded but not paved 3

Paved road 4

Other (specify) 5

214. What is the width of the road ?

There is none 1

Less than 3 meters 2

3 - 8 meters 3

Greater than 8 meters 4

215. Are there sidewalks on the street leading to the house ?

Yes 1

No 2

216. Are there curbs on the road ?

Yes 1

No 2

217. Is there any environmental beautification within 20 meters of the building ?

A lot of large trees, bushes and parks 1

Some trees, shrubs, and flowers 2

There is none 3

218. Is there stagnant water in the street ?

Yes 1

No 2



APPENDIX 7

Selected Characteristics of  
Sample Enumeration Districts  
in 1981

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Table A-1 presents tabulations of selected characteristics of sample enumeration districts in Cairo and Beni Suef. Data presented in Columns 3 through 15 are based on the 1981 scanning survey described in Chapter 2. It should be noted regarding provision of utilities that public provision of a utility and "no utility" are not exhaustive; for each utility, non-public systems (e.g., wells for water, cesspools for sewage, and generators for electricity) may also exist. Data in Column 16, the estimated percentage informal housing comprises of the housing stock is based on occupant survey responses for owners and the statistical technique described in Chapter 4 for renters, where the latter essentially forecasts whether a rental unit is likely to be formal or informal based on its structural characteristics and the characteristics of the area in which it is located.

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TABLE A-1  
Selected Characteristics of  
Sample Enumeration Districts in 1981

Qism or area	Enumeration District	Buildings	Dwellings	Floors	Dwellings Buildings	Floors Buildings	Percent of Buildings gvt/public	Public Water	No Water	Public Sewer	No Sewer	Public Electricity	No Electricity	Percent of Dwellings built 1976-1981	Estimated Percentage Informal Housing
<b>Cairo governorate</b>															
at-Tebin	1	34	192	96	5.6	2.8	74	74	26	74	26	76	6	0	0
Belwan	2	36	341	117	9.5	3.3	31	89	11	89	11	97	3	33	25
Ma'adi	3	74	386	210	5.2	2.8	3	99	1	97	3	99	1	35	89
Ma'adi	4	132	426	251	3.2	1.9	1	61	39	62	9	89	11	38	89
Naar al-Qadima	5	52	181	133	3.5	2.6	0	77	23	77	23	100	0	18	60
Naar al-Qadima	6	168	215	114	7.3	0.7*	0	41	59	47	53	62	38	2	80
al-Khalifa	7	48	189	65	3.9	1.4	33	29	71	29	71	31	69	0	25
aa-Sayeda Zeinab	8	28	175	84	6.3	3.0	96	93	7	93	7	96	4	0	50
aa-Sayeda Zeinab	9	37	241	136	6.5	3.7	3	92	8	92	5	97	3	7	0
Naar an-Nil	10	16	235	87	14.7	5.4	13	94	6	94	6	94	6	3	63
Buleq	11	44	261	758	5.9	3.6	0	84	0	95	5	93	7	3	40
al-Arbakia	12	40	247	137	6.2	3.4	3	98	2	98	2	98	2	2	0
al-Muski	13	13	205	53	15.8	4.1	15	100	0	85	0	85	15	10	30
ad-Darb al-Ahmar	14	40	209	98	5.2	2.5	8	88	12	88	12	98	2	7	13
al-Gamaliya	15	37	207	137	5.6	3.7	0	95	5	97	0	100	0	7	75
Bab ash-Sha'ariya	16	33	191	110	5.8	3.3	6	94	6	94	6	97	3	2	0
aa-Sahir	17	31	246	114	7.9	3.7	3	94	3	97	2	97	3	0	0
Shubra	18	37	158	103	4.3	2.8	0	100	0	100	0	100	0	2	44
Rod al-Parag	19	51	237	140	4.7	2.8	0	84	16	86	14	88	12	0	50
Rod al-Parag	20	39	263	149	6.7	3.8	0	97	3	97	3	97	3	1	30
aa-Sahel	21	28	212	125	3.1	4.5	4	100	0	100	0	100	0	2	30
aa-Sahel	22	38	230	162	6.1	4.3	5	97	3	97	3	97	3	7	90
aa-Sahel	23	219	264	435	1.2	2.0	100	98	2	98	2	98	2	20	0
ash-Sharabiya	24	114	423	273	3.7	3.4	0	60	38	95	0	95	5	32	100
ash-Sharabiya	25	20	240	100	12.0	5.0	100	100	0	100	0	100	0	0	40
ash-Sharabiya	26	44	223	148	5.1	3.2	0	100	0	100	0	100	0	4	20
Bada'iq el-Quba	27	43	193	137	4.5	3.2	0	100	0	100	0	100	0	14	60
al-Mayli	28	15	196	77	13.1	5.1	7	93	7	93	7	87	13	23	0
Medinat Naar	29	36	235	134	6.5	3.7	0	97	3	97	3	97	3	15	0
an-Nozha	30	52	388	191	7.5	3.7	0	96	4	92	8	92	8	16	89
Naar al-Qadida	31	28	220	106	7.9	3.8	7	89	11	86	14	92	4	2	80
aa-Zeitun	32	32	204	106	6.4	3.3	0	100	0	100	0	97	0	0	78
aa-Zeitun	33	66	281	191	4.3	2.9	0	69	0	98	0	100	0	31	90
al-Matariya	34	127	379	277	3.0	2.2	2	33	11	74	9	91	9	55	100
al-Matariya	35	70	264	185	3.8	2.6	0	73	0	87	13	96	4	33	100
al-Matariya	36	145	230	310	1.6	2.1	0	100	0	100	0	100	0	7	100
al-Matariya	37	168	444	276	2.6	1.6	0	65	20	57	19	77	23	62	100
<b>Qalyubiya governorate</b>															
Shubra al-Kheima	38	65	261	178	4.0	2.7	0	0	92	0	2	94	6	15	100
Shubra al-Kheima	39	118	389	292	3.3	2.5	0	10	87	60	1	97	3	33	100
el-Khank	40	115	158	131	1.4	1.1	0	43	57	0	32	76	24	20	20
<b>Giza governorate</b>															
al-Ahram	41	236	291	290	1.2	1.2	0	1	72	0	92	94	6	21	100
Buleq ad-Dakrur	42	79	335	220	4.2	2.8	0	51	3	90	5	94	6	49	90
Buleq ad-Dakrur	43	62	391	167	6.3	2.7	0	78	22	96	4	92	8	25	100
Buleq ad-Dakrur	44	57	263	168	4.6	3.0	0	91	9	93	2	93	7	31	89
al-Giza	45	52	225	162	4.3	3.1	0	87	13	85	8	94	6	15	89
ad-Dokki	46	66	282	210	4.3	3.2	3	89	11	85	14	92	8	25	56
al-'Aqusa	47	75	282	206	3.8	2.8	4	80	20	93	7	96	4	30	40
Imbaba	48	54	292	206	5.4	3.8	0	96	4	96	4	98	2	22	88
Imbaba	49	44	238	161	5.4	3.7	0	64	36	100	0	100	0	16	83
al-Badrashin	50	127	148	182	1.2	1.4	0	14	2	0	14	80	20	18	67
<b>Beni Suef City</b>															
	51	125	223	211	1.8	1.7	1	70	30	58	30	94	6	14	25
	52	65	186	125	2.9	1.9	6	71	28	38	18	89	11	10	100
	53	53	237	129	4.5	2.4	2	100	0	100	0	100	0	19	100
	54	129	378	236	2.9	1.8	0	67	33	41	35	84	16	7	23
	55	85	294	195	3.5	2.3	6	99	1	98	2	100	0	4	92
	56	131	189	178	1.4	1.4	0	72	25	41	0	66	13	0	100
	57	120	319	204	2.7	1.7	6	34	12	20	14	93	7	10	100
	58	95	249	189	2.6	2.0	16	30	1	0	34	6	6	13	100
	59	202	193	193	1.0	1.0	0	16	1	0	92	67	33	13	100
	60	106	189	152	1.8	1.4	3	52	48	41	59	72	28	4	47
<b>Beni Suef markez villages</b>															
	61	198	198	255	1.0	1.3	2	4	89	0	98	69	31	11	100
	62	197	197	197	1.0	1.0	0	15	85	0	2	79	21	4	100
	63	214	206	206	1.0	1.0	0	10	87	0	79	55	45	6	100
	64	227	217	218	1.0	1.0	0	0	100	0	100	0	100	12	100
	65	191	190	327	1.0	1.7	0	3	88	0	100	71	29	0	100
	66	197	194	253	1.0	1.3	1	2	91	0	86	49	51	19	100
	67	194	192	207	1.0	1.1	1	2	98	0	5	56	44	6	100
	68	202	192	205	1.0	1.0	2	4	88	0	100	34	66	3	100
	69	224	215	224	1.0	1.0	0	0	94	0	85	60	40	15	100
	70	198	194	196	1.0	1.0	1	1	1	0	97	56	44	3	100

\* Reflects possible coding error in data.

**Appendix 8**

**Comparisons of Sample and  
Population Estimates  
of Selected Variables**

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This appendix is intended to demonstrate briefly the statistical generality of many of the results presented in the main text. In the case of the scanning survey, the samples on which many calculations are based are approximately 13,000 dwelling units from 50 Cairo enumeration districts and approximately 4,500 dwelling units from 20 enumeration districts in Beni Suef. Direct comparisons have been made between sample outcomes using unpublished census data for this study's sampled districts and population outcomes for a number of variables for Cairo in 1976, the time of the last complete census in Egypt. Table A-2 presents estimated sample and population means for selected variables. As the table indicates, relatively modest deviations exist between sample and population estimates; in no case does the sample estimate differ by more than 8 percent from the corresponding population estimate. Time and availability of data limited the number of such comparisons that could be made.

Explicit calculations of confidence intervals for data based on the 1981 scanning survey (which take explicit account of the cluster sample design described in Chapter 2) suggest that the sample size is fully adequate to support the more important generalizations presented in the text such as those based on estimated vacancy rates and construction rates. Chapter 3, for example, presents confidence intervals for mean Cairo area vacancy and construction rates (5.5 percent and 4.3 percent respectively) which indicate that 95 percent confidence intervals are approximately 30 percent of the estimated sample mean. It is, of course,, true that as estimated sample means for proportions approach either zero or 1.0 that confidence intervals proportional to the estimated sample mean increase. Thus confidence intervals are in relative terms greater for variables with small means such as vacancy rates. Corresponding confidence intervals for proportion-type variables having means on the order of 0.5 (e.g., variables such as buildings connected to public sewer and water lines) will have 95 percent confidence intervals which are relatively smaller in relation to the mean. Thus the sorts of deviations calculated in Table A-2 are well within the expected limits.

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Table A-2

Sample and Population Mean Estimates  
for Selected 1976 Variables in Cairo

Variable	Sample Enumeration Districts, 1976	Population Estimate, 1976	Percentage Difference
Percent of Buildings Connected to:			
Public sewer	56 <sup>1</sup>	52 <sup>2</sup>	7
Public water	57 <sup>1</sup>	56 <sup>2</sup>	2
Electricity	82 <sup>1</sup>	76 <sup>2</sup>	8
Floors/building	3.30 <sup>1</sup>	3.58 <sup>3</sup>	-8
Dwellings/building	2.19 <sup>1</sup>	2.09 <sup>3</sup>	-5

<sup>1</sup> Source: Unpublished CAPMAS data for 50 sampled enumeration districts.

<sup>2</sup> Source: Arab Republic of Egypt, The National Policy for the Confrontation of the Housing Problem, Appendix I, Report of the Subcommittee for Housing, Social Studies, and Construction Planning, November, 1979. (based on 1976 CAPMAS data).

<sup>3</sup> Source: 1976 CAPMAS data for urban areas of Cairo. Qalyubiya, and Giza governorates provided by USAID--Cairo.

Explicit confidence intervals for variables which draw on the occupant survey are not calculated here, in part because of the frequency with which outcome measures are ultimately analyzed within a multivariate framework. Tabular results are often intended to provide a simplified and highly aggregated view of outcome measures, with the real testing left to regression estimates. In a multivariate context with sample sizes typically on the order of from 100 to 500, the power of any regression tests on significance of individual variables is extremely high. In most cases where regression results are given, either standard errors or significance levels of variables are indicated. These tests may be used to generate confidence intervals for individual parameters.